APPENDIX A
CALEEMOD OUTPUT TABLES

Beyond Food Mart

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	24.30	1000sqft	0.56	24,300.00	0
Other Non-Asphalt Surfaces	27.30	1000sqft	0.63	27,300.00	0
Convenience Market With Gas Pumps	16.00	Pump	0.20	6,589.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - per site plan

Construction Phase -

Vehicle Trips - per tia

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	2,258.80	6,589.00
tblLandUse	LotAcreage	0.05	0.20
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	204.47	87.60
tblVehicleTrips	SU_TR	166.88	87.60
tblVehicleTrips	WD_TR	542.60	87.60

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2186	1.5519	1.4547	2.8200e-003	0.0494	0.0731	0.1225	0.0171	0.0704	0.0875	0.0000	238.5389	238.5389	0.0380	0.0000	239.4884
2022	0.0233	4.2600e-003	5.8800e-003	1.0000e-005	1.6000e-004	2.5000e-004	4.1000e-004	4.0000e-005	2.5000e-004	2.9000e-004	0.0000	0.8944	0.8944	5.0000e-005	0.0000	0.8958
Maximum	**0.2186**	**1.5519**	**1.4547**	**2.8200e-003**	**0.0494**	**0.0731**	**0.1225**	**0.0171**	**0.0704**	**0.0875**	**0.0000**	**238.5389**	**238.5389**	**0.0380**	**0.0000**	**239.4884**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2186	1.5519	1.4547	2.8200e-003	0.0408	0.0731	0.1139	0.0127	0.0704	0.0831	0.0000	238.5387	238.5387	0.0380	0.0000	239.4882
2022	0.0233	4.2600e-003	5.8800e-003	1.0000e-005	1.6000e-004	2.5000e-004	4.1000e-004	4.0000e-005	2.5000e-004	2.9000e-004	0.0000	0.8944	0.8944	5.0000e-005	0.0000	0.8958
Maximum	**0.2186**	**1.5519**	**1.4547**	**2.8200e-003**	**0.0408**	**0.0731**	**0.1139**	**0.0127**	**0.0704**	**0.0831**	**0.0000**	**238.5387**	**238.5387**	**0.0380**	**0.0000**	**239.4882**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**17.33**	**0.00**	**6.99**	**25.64**	**0.00**	**5.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**2-1-2021**	**4-30-2021**	0.3745	0.3745
2	**5-1-2021**	**7-31-2021**	0.5446	0.5446
3	**8-1-2021**	**10-31-2021**	0.5446	0.5446
4	**11-1-2021**	**1-31-2022**	0.3444	0.3444
		Highest	0.5446	0.5446

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0310	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6800e-003	1.6800e-003	0.0000	0.0000	1.7900e-003
Energy	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	27.2960	27.2960	1.1100e-003	2.4000e-004	27.3955
Mobile	0.3876	3.3103	4.5721	0.0209	1.5934	0.0144	1.6078	0.4269	0.0135	0.4404	0.0000	1,934.2478	1,934.2478	0.1008	0.0000	1,936.7681
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0531	1.0572	1.1102	5.5000e-003	1.4000e-004	1.2887
Total	**0.4187**	**3.3111**	**4.5736**	**0.0209**	**1.5934**	**0.0144**	**1.6079**	**0.4269**	**0.0135**	**0.4404**	**0.0531**	**1,962.6026**	**1,962.6557**	**0.1074**	**3.8000e-004**	**1,965.4540**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0310	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6800e-003	1.6800e-003	0.0000	0.0000	1.7900e-003
Energy	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	27.2960	27.2960	1.1100e-003	2.4000e-004	27.3955
Mobile	0.3876	3.3103	4.5721	0.0209	1.5934	0.0144	1.6078	0.4269	0.0135	0.4404	0.0000	1,934.2478	1,934.2478	0.1008	0.0000	1,936.7681
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0531	1.0572	1.1102	5.5000e-003	1.4000e-004	1.2887
Total	**0.4187**	**3.3111**	**4.5736**	**0.0209**	**1.5934**	**0.0144**	**1.6079**	**0.4269**	**0.0135**	**0.4404**	**0.0531**	**1,962.6026**	**1,962.6557**	**0.1074**	**3.8000e-004**	**1,965.4540**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/27/2021	3/2/2021	5	2	
2	Grading	Grading	3/3/2021	3/8/2021	5	4	
3	Building Construction	Building Construction	3/9/2021	12/13/2021	5	200	
4	Paving	Paving	12/14/2021	12/27/2021	5	10	
5	Architectural Coating	Architectural Coating	12/28/2021	1/10/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 1.19

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 9,884; Non-Residential Outdoor: 3,295; Striped Parking Area: 3,096 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	24.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5600e-003	0.0174	7.5600e-003	2.0000e-005		7.7000e-004	7.7000e-004		7.0000e-004	7.0000e-004	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241
Total	**1.5600e-003**	**0.0174**	**7.5600e-003**	**2.0000e-005**	**5.8000e-003**	**7.7000e-004**	**6.5700e-003**	**2.9500e-003**	**7.0000e-004**	**3.6500e-003**	**0.0000**	**1.5118**	**1.5118**	**4.9000e-004**	**0.0000**	**1.5241**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.5000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0711	0.0711	0.0000	0.0000	0.0712
Total	**3.0000e-005**	**2.0000e-005**	**2.5000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**0.0000**	**0.0712**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6100e-003	0.0000	2.6100e-003	1.3300e-003	0.0000	1.3300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5600e-003	0.0174	7.5600e-003	2.0000e-005		7.7000e-004	7.7000e-004		7.0000e-004	7.0000e-004	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241
Total	**1.5600e-003**	**0.0174**	**7.5600e-003**	**2.0000e-005**	**2.6100e-003**	**7.7000e-004**	**3.3800e-003**	**1.3300e-003**	**7.0000e-004**	**2.0300e-003**	**0.0000**	**1.5118**	**1.5118**	**4.9000e-004**	**0.0000**	**1.5241**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.5000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0711	0.0711	0.0000	0.0000	0.0712
Total	**3.0000e-005**	**2.0000e-005**	**2.5000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**0.0000**	**0.0712**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0287	0.0127	3.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968
Total	**2.5800e-003**	**0.0287**	**0.0127**	**3.0000e-005**	**9.8300e-003**	**1.2800e-003**	**0.0111**	**5.0500e-003**	**1.1700e-003**	**6.2200e-003**	**0.0000**	**2.4767**	**2.4767**	**8.0000e-004**	**0.0000**	**2.4968**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1422	0.1422	0.0000	0.0000	0.1423
Total	**7.0000e-005**	**5.0000e-005**	**5.0000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1422**	**0.1422**	**0.0000**	**0.0000**	**0.1423**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4200e-003	0.0000	4.4200e-003	2.2700e-003	0.0000	2.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0287	0.0127	3.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968
Total	**2.5800e-003**	**0.0287**	**0.0127**	**3.0000e-005**	**4.4200e-003**	**1.2800e-003**	**5.7000e-003**	**2.2700e-003**	**1.1700e-003**	**3.4400e-003**	**0.0000**	**2.4767**	**2.4767**	**8.0000e-004**	**0.0000**	**2.4968**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1422	0.1422	0.0000	0.0000	0.1423
Total	**7.0000e-005**	**5.0000e-005**	**5.0000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1422**	**0.1422**	**0.0000**	**0.0000**	**0.1423**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1813	1.3636	1.2899	2.2000e-003		0.0684	0.0684		0.0661	0.0661	0.0000	181.5476	181.5476	0.0324	0.0000	182.3579
Total	**0.1813**	**1.3636**	**1.2899**	**2.2000e-003**		**0.0684**	**0.0684**		**0.0661**	**0.0661**	**0.0000**	**181.5476**	**181.5476**	**0.0324**	**0.0000**	**182.3579**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3900e-003	0.0932	0.0179	2.6000e-004	6.3200e-003	1.8000e-004	6.4900e-003	1.8200e-003	1.7000e-004	1.9900e-003	0.0000	24.3973	24.3973	1.8600e-003	0.0000	24.4439
Worker	0.0103	6.9300e-003	0.0756	2.4000e-004	0.0264	1.6000e-004	0.0265	7.0000e-003	1.5000e-004	7.1500e-003	0.0000	21.3323	21.3323	5.0000e-004	0.0000	21.3447
Total	**0.0127**	**0.1002**	**0.0935**	**5.0000e-004**	**0.0327**	**3.4000e-004**	**0.0330**	**8.8200e-003**	**3.2000e-004**	**9.1400e-003**	**0.0000**	**45.7296**	**45.7296**	**2.3600e-003**	**0.0000**	**45.7886**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1813	1.3636	1.2899	2.2000e-003		0.0684	0.0684		0.0661	0.0661	0.0000	181.5474	181.5474	0.0324	0.0000	182.3577
Total	**0.1813**	**1.3636**	**1.2899**	**2.2000e-003**		**0.0684**	**0.0684**		**0.0661**	**0.0661**	**0.0000**	**181.5474**	**181.5474**	**0.0324**	**0.0000**	**182.3577**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3900e-003	0.0932	0.0179	2.6000e-004	6.3200e-003	1.8000e-004	6.4900e-003	1.8200e-003	1.7000e-004	1.9900e-003	0.0000	24.3973	24.3973	1.8600e-003	0.0000	24.4439
Worker	0.0103	6.9300e-003	0.0756	2.4000e-004	0.0264	1.6000e-004	0.0265	7.0000e-003	1.5000e-004	7.1500e-003	0.0000	21.3323	21.3323	5.0000e-004	0.0000	21.3447
Total	**0.0127**	**0.1002**	**0.0935**	**5.0000e-004**	**0.0327**	**3.4000e-004**	**0.0330**	**8.8200e-003**	**3.2000e-004**	**9.1400e-003**	**0.0000**	**45.7296**	**45.7296**	**2.3600e-003**	**0.0000**	**45.7886**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8700e-003	0.0387	0.0443	7.0000e-005		2.0800e-003	2.0800e-003		1.9100e-003	1.9100e-003	0.0000	5.8825	5.8825	1.8600e-003	0.0000	5.9291
Paving	7.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6000e-003**	**0.0387**	**0.0443**	**7.0000e-005**		**2.0800e-003**	**2.0800e-003**		**1.9100e-003**	**1.9100e-003**	**0.0000**	**5.8825**	**5.8825**	**1.8600e-003**	**0.0000**	**5.9291**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.0500e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5778	0.5778	1.0000e-005	0.0000	0.5781
Total	**2.8000e-004**	**1.9000e-004**	**2.0500e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5778**	**0.5778**	**1.0000e-005**	**0.0000**	**0.5781**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8700e-003	0.0387	0.0443	7.0000e-005		2.0800e-003	2.0800e-003		1.9100e-003	1.9100e-003	0.0000	5.8825	5.8825	1.8600e-003	0.0000	5.9291
Paving	7.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6000e-003**	**0.0387**	**0.0443**	**7.0000e-005**		**2.0800e-003**	**2.0800e-003**		**1.9100e-003**	**1.9100e-003**	**0.0000**	**5.8825**	**5.8825**	**1.8600e-003**	**0.0000**	**5.9291**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.0500e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5778	0.5778	1.0000e-005	0.0000	0.5781
Total	**2.8000e-004**	**1.9000e-004**	**2.0500e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5778**	**0.5778**	**1.0000e-005**	**0.0000**	**0.5781**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4000e-004	3.0500e-003	3.6400e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	0.5107	0.5107	4.0000e-005	0.0000	0.5115
Total	**0.0155**	**3.0500e-003**	**3.6400e-003**	**1.0000e-005**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.5107**	**0.5107**	**4.0000e-005**	**0.0000**	**0.5115**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0889	0.0889	0.0000	0.0000	0.0889
Total	**4.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0889**	**0.0889**	**0.0000**	**0.0000**	**0.0889**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4000e-004	3.0500e-003	3.6400e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	0.5107	0.5107	4.0000e-005	0.0000	0.5115
Total	**0.0155**	**3.0500e-003**	**3.6400e-003**	**1.0000e-005**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.5107**	**0.5107**	**4.0000e-005**	**0.0000**	**0.5115**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0889	0.0889	0.0000	0.0000	0.0889
Total	**4.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0889**	**0.0889**	**0.0000**	**0.0000**	**0.0889**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0226					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	4.2300e-003	5.4400e-003	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	0.7660	0.7660	5.0000e-005	0.0000	0.7672
Total	**0.0232**	**4.2300e-003**	**5.4400e-003**	**1.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**0.7660**	**0.7660**	**5.0000e-005**	**0.0000**	**0.7672**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.3000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1285	0.1285	0.0000	0.0000	0.1285
Total	**6.0000e-005**	**4.0000e-005**	**4.3000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1285**	**0.1285**	**0.0000**	**0.0000**	**0.1285**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0226					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	4.2300e-003	5.4400e-003	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	0.7660	0.7660	5.0000e-005	0.0000	0.7672
Total	**0.0232**	**4.2300e-003**	**5.4400e-003**	**1.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**0.7660**	**0.7660**	**5.0000e-005**	**0.0000**	**0.7672**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.3000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1285	0.1285	0.0000	0.0000	0.1285
Total	**6.0000e-005**	**4.0000e-005**	**4.3000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1285**	**0.1285**	**0.0000**	**0.0000**	**0.1285**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3876	3.3103	4.5721	0.0209	1.5934	0.0144	1.6078	0.4269	0.0135	0.4404	0.0000	1,934.2478	1,934.2478	0.1008	0.0000	1,936.7681
Unmitigated	0.3876	3.3103	4.5721	0.0209	1.5934	0.0144	1.6078	0.4269	0.0135	0.4404	0.0000	1,934.2478	1,934.2478	0.1008	0.0000	1,936.7681

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	1,401.60	1,401.60	1401.60	4,173,598	4,173,598
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,401.60	1,401.60	1,401.60	4,173,598	4,173,598

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	100	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Non-Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	26.5154	26.5154	1.0900e-003	2.3000e-004	26.6102
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	26.5154	26.5154	1.0900e-003	2.3000e-004	26.6102
NaturalGas Mitigated	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7806	0.7806	1.0000e-005	1.0000e-005	0.7852
NaturalGas Unmitigated	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7806	0.7806	1.0000e-005	1.0000e-005	0.7852

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	14627.6	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7806	0.7806	1.0000e-005	1.0000e-005	0.7852
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.0000e-005**	**7.2000e-004**	**6.0000e-004**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.7806**	**0.7806**	**1.0000e-005**	**1.0000e-005**	**0.7852**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	14627.6	8.0000e-005	7.2000e-004	6.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7806	0.7806	1.0000e-005	1.0000e-005	0.7852
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.0000e-005**	**7.2000e-004**	**6.0000e-004**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.7806**	**0.7806**	**1.0000e-005**	**1.0000e-005**	**0.7852**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	83219.1	26.5154	1.0900e-003	2.3000e-004	26.6102
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**26.5154**	**1.0900e-003**	**2.3000e-004**	**26.6102**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	83219.1	26.5154	1.0900e-003	2.3000e-004	26.6102
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**26.5154**	**1.0900e-003**	**2.3000e-004**	**26.6102**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0310	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6800e-003	1.6800e-003	0.0000	0.0000	1.7900e-003
Unmitigated	0.0310	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6800e-003	1.6800e-003	0.0000	0.0000	1.7900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6800e-003	1.6800e-003	0.0000	0.0000	1.7900e-003
Total	**0.0310**	**1.0000e-005**	**8.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.6800e-003**	**1.6800e-003**	**0.0000**	**0.0000**	**1.7900e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6800e-003	1.6800e-003	0.0000	0.0000	1.7900e-003
Total	**0.0310**	**1.0000e-005**	**8.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.6800e-003**	**1.6800e-003**	**0.0000**	**0.0000**	**1.7900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.1102	5.5000e-003	1.4000e-004	1.2887
Unmitigated	1.1102	5.5000e-003	1.4000e-004	1.2887

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.167315 / 0.102548	1.1102	5.5000e-003	1.4000e-004	1.2887
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.1102**	**5.5000e-003**	**1.4000e-004**	**1.2887**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.167315 / 0.102548	1.1102	5.5000e-003	1.4000e-004	1.2887
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.1102**	**5.5000e-003**	**1.4000e-004**	**1.2887**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Beyond Food Mart

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	24.30	1000sqft	0.56	24,300.00	0
Other Non-Asphalt Surfaces	27.30	1000sqft	0.63	27,300.00	0
Convenience Market With Gas Pumps	16.00	Pump	0.20	6,589.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - per site plan

Construction Phase -

Vehicle Trips - per tia

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	2,258.80	6,589.00
tblLandUse	LotAcreage	0.05	0.20
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	204.47	87.60
tblVehicleTrips	SU_TR	166.88	87.60
tblVehicleTrips	WD_TR	542.60	87.60

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.7861	17.4419	13.9518	0.0272	5.8890	0.7659	6.6549	2.9774	0.7046	3.6820	0.0000	2,530.0112	2,530.0112	0.5410	0.0000	2,539.5840
2022	7.7702	1.4206	1.9841	3.4800e-003	0.0559	0.0820	0.1379	0.0148	0.0820	0.0968	0.0000	332.7404	332.7404	0.0195	0.0000	333.2270
Maximum	**7.7861**	**17.4419**	**13.9518**	**0.0272**	**5.8890**	**0.7659**	**6.6549**	**2.9774**	**0.7046**	**3.6820**	**0.0000**	**2,530.0112**	**2,530.0112**	**0.5410**	**0.0000**	**2,539.5840**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.7861	17.4419	13.9518	0.0272	2.6992	0.7659	3.4651	1.3529	0.7046	2.0575	0.0000	2,530.0112	2,530.0112	0.5410	0.0000	2,539.5840
2022	7.7702	1.4206	1.9841	3.4800e-003	0.0559	0.0820	0.1379	0.0148	0.0820	0.0968	0.0000	332.7404	332.7404	0.0195	0.0000	333.2270
Maximum	**7.7861**	**17.4419**	**13.9518**	**0.0272**	**2.6992**	**0.7659**	**3.4651**	**1.3529**	**0.7046**	**2.0575**	**0.0000**	**2,530.0112**	**2,530.0112**	**0.5410**	**0.0000**	**2,539.5840**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.66**	**0.00**	**46.96**	**54.29**	**0.00**	**42.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1701	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Energy	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
Mobile	2.5186	17.9253	28.0349	0.1214	8.9005	0.0788	8.9793	2.3813	0.0738	2.4551		12,397.7966	12,397.7966	0.6065		12,412.9592
Total	**2.6890**	**17.9293**	**28.0451**	**0.1214**	**8.9005**	**0.0791**	**8.9796**	**2.3813**	**0.0741**	**2.4554**		**12,402.5261**	**12,402.5261**	**0.6066**	**9.0000e-005**	**12,417.7177**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1701	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Energy	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
Mobile	2.5186	17.9253	28.0349	0.1214	8.9005	0.0788	8.9793	2.3813	0.0738	2.4551		12,397.7966	12,397.7966	0.6065		12,412.9592
Total	**2.6890**	**17.9293**	**28.0451**	**0.1214**	**8.9005**	**0.0791**	**8.9796**	**2.3813**	**0.0741**	**2.4554**		**12,402.5261**	**12,402.5261**	**0.6066**	**9.0000e-005**	**12,417.7177**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/27/2021	3/2/2021	5	2	
2	Grading	Grading	3/3/2021	3/8/2021	5	4	
3	Building Construction	Building Construction	3/9/2021	12/13/2021	5	200	
4	Paving	Paving	12/14/2021	12/27/2021	5	10	
5	Architectural Coating	Architectural Coating	12/28/2021	1/10/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 1.19

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 9,884; Non-Residential Outdoor: 3,295; Striped Parking Area: 3,096 (Architectural Coating – sqft)

OffRoad Equipment

Beyond Food Mart - Riverside-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	24.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041		1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**5.7996**	**0.7654**	**6.5650**	**2.9537**	**0.7041**	**3.6578**		**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0379	0.0216	0.2958	8.5000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		85.1801	85.1801	2.0300e-003		85.2309
Total	**0.0379**	**0.0216**	**0.2958**	**8.5000e-004**	**0.0894**	**5.3000e-004**	**0.0900**	**0.0237**	**4.9000e-004**	**0.0242**		**85.1801**	**85.1801**	**2.0300e-003**		**85.2309**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**2.6098**	**0.7654**	**3.3752**	**1.3292**	**0.7041**	**2.0333**	**0.0000**	**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0379	0.0216	0.2958	8.5000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		85.1801	85.1801	2.0300e-003		85.2309
Total	**0.0379**	**0.0216**	**0.2958**	**8.5000e-004**	**0.0894**	**5.3000e-004**	**0.0900**	**0.0237**	**4.9000e-004**	**0.0242**		**85.1801**	**85.1801**	**2.0300e-003**		**85.2309**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**4.9143**	**0.6379**	**5.5522**	**2.5256**	**0.5869**	**3.1125**		**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0379	0.0216	0.2958	8.5000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		85.1801	85.1801	2.0300e-003		85.2309
Total	**0.0379**	**0.0216**	**0.2958**	**8.5000e-004**	**0.0894**	**5.3000e-004**	**0.0900**	**0.0237**	**4.9000e-004**	**0.0242**		**85.1801**	**85.1801**	**2.0300e-003**		**85.2309**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2114	0.0000	2.2114	1.1365	0.0000	1.1365			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**2.2114**	**0.6379**	**2.8493**	**1.1365**	**0.5869**	**1.7234**	**0.0000**	**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0379	0.0216	0.2958	8.5000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		85.1801	85.1801	2.0300e-003		85.2309
Total	**0.0379**	**0.0216**	**0.2958**	**8.5000e-004**	**0.0894**	**5.3000e-004**	**0.0900**	**0.0237**	**4.9000e-004**	**0.0242**		**85.1801**	**85.1801**	**2.0300e-003**		**85.2309**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0234	0.9254	0.1651	2.5900e-003	0.0640	1.7600e-003	0.0658	0.0184	1.6800e-003	0.0201		273.2510	273.2510	0.0196		273.7397
Worker	0.1138	0.0648	0.8873	2.5600e-003	0.2683	1.5800e-003	0.2698	0.0711	1.4600e-003	0.0726		255.5402	255.5402	6.0900e-003		255.6926
Total	**0.1371**	**0.9902**	**1.0524**	**5.1500e-003**	**0.3323**	**3.3400e-003**	**0.3356**	**0.0896**	**3.1400e-003**	**0.0927**		**528.7912**	**528.7912**	**0.0256**		**529.4323**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0234	0.9254	0.1651	2.5900e-003	0.0640	1.7600e-003	0.0658	0.0184	1.6800e-003	0.0201		273.2510	273.2510	0.0196		273.7397
Worker	0.1138	0.0648	0.8873	2.5600e-003	0.2683	1.5800e-003	0.2698	0.0711	1.4600e-003	0.0726		255.5402	255.5402	6.0900e-003		255.6926
Total	**0.1371**	**0.9902**	**1.0524**	**5.1500e-003**	**0.3323**	**3.3400e-003**	**0.3356**	**0.0896**	**3.1400e-003**	**0.0927**		**528.7912**	**528.7912**	**0.0256**		**529.4323**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830		1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	0.1467					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9206**	**7.7422**	**8.8569**	**0.0135**		**0.4153**	**0.4153**		**0.3830**	**0.3830**		**1,296.8664**	**1,296.8664**	**0.4111**		**1,307.1442**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0351	0.4806	1.3900e-003	0.1453	8.6000e-004	0.1462	0.0385	7.9000e-004	0.0393		138.4176	138.4176	3.3000e-003		138.5001
Total	**0.0616**	**0.0351**	**0.4806**	**1.3900e-003**	**0.1453**	**8.6000e-004**	**0.1462**	**0.0385**	**7.9000e-004**	**0.0393**		**138.4176**	**138.4176**	**3.3000e-003**		**138.5001**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830	0.0000	1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	0.1467					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9206**	**7.7422**	**8.8569**	**0.0135**		**0.4153**	**0.4153**		**0.3830**	**0.3830**	**0.0000**	**1,296.8664**	**1,296.8664**	**0.4111**		**1,307.1442**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0351	0.4806	1.3900e-003	0.1453	8.6000e-004	0.1462	0.0385	7.9000e-004	0.0393		138.4176	138.4176	3.3000e-003		138.5001
Total	**0.0616**	**0.0351**	**0.4806**	**1.3900e-003**	**0.1453**	**8.6000e-004**	**0.1462**	**0.0385**	**7.9000e-004**	**0.0393**		**138.4176**	**138.4176**	**3.3000e-003**		**138.5001**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.5435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**7.7624**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0237	0.0135	0.1849	5.3000e-004	0.0559	3.3000e-004	0.0562	0.0148	3.0000e-004	0.0151		53.2376	53.2376	1.2700e-003		53.2693
Total	**0.0237**	**0.0135**	**0.1849**	**5.3000e-004**	**0.0559**	**3.3000e-004**	**0.0562**	**0.0148**	**3.0000e-004**	**0.0151**		**53.2376**	**53.2376**	**1.2700e-003**		**53.2693**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.5435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**7.7624**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0237	0.0135	0.1849	5.3000e-004	0.0559	3.3000e-004	0.0562	0.0148	3.0000e-004	0.0151		53.2376	53.2376	1.2700e-003		53.2693
Total	**0.0237**	**0.0135**	**0.1849**	**5.3000e-004**	**0.0559**	**3.3000e-004**	**0.0562**	**0.0148**	**3.0000e-004**	**0.0151**		**53.2376**	**53.2376**	**1.2700e-003**		**53.2693**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.5435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**7.7480**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0222	0.0122	0.1705	5.1000e-004	0.0559	3.2000e-004	0.0562	0.0148	3.0000e-004	0.0151		51.2923	51.2923	1.1400e-003		51.3208
Total	**0.0222**	**0.0122**	**0.1705**	**5.1000e-004**	**0.0559**	**3.2000e-004**	**0.0562**	**0.0148**	**3.0000e-004**	**0.0151**		**51.2923**	**51.2923**	**1.1400e-003**		**51.3208**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.5435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**7.7480**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0222	0.0122	0.1705	5.1000e-004	0.0559	3.2000e-004	0.0562	0.0148	3.0000e-004	0.0151		51.2923	51.2923	1.1400e-003		51.3208
Total	**0.0222**	**0.0122**	**0.1705**	**5.1000e-004**	**0.0559**	**3.2000e-004**	**0.0562**	**0.0148**	**3.0000e-004**	**0.0151**		**51.2923**	**51.2923**	**1.1400e-003**		**51.3208**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5186	17.9253	28.0349	0.1214	8.9005	0.0788	8.9793	2.3813	0.0738	2.4551		12,397.7966	12,397.7966	0.6065		12,412.9592
Unmitigated	2.5186	17.9253	28.0349	0.1214	8.9005	0.0788	8.9793	2.3813	0.0738	2.4551		12,397.7966	12,397.7966	0.6065		12,412.9592

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	1,401.60	1,401.60	1401.60	4,173,598	4,173,598
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,401.60	1,401.60	1,401.60	4,173,598	4,173,598

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	100	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Non-Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
NaturalGas Unmitigated	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	40.0756	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.3000e-004**	**3.9300e-003**	**3.3000e-003**	**2.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**		**4.7148**	**4.7148**	**9.0000e-005**	**9.0000e-005**	**4.7428**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0400756	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.3000e-004**	**3.9300e-003**	**3.3000e-003**	**2.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**		**4.7148**	**4.7148**	**9.0000e-005**	**9.0000e-005**	**4.7428**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1701	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Unmitigated	0.1701	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0207					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1487					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.4000e-004	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Total	**0.1701**	**6.0000e-005**	**6.9100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0148**	**0.0148**	**4.0000e-005**		**0.0158**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0207					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1487					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.4000e-004	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Total	**0.1701**	**6.0000e-005**	**6.9100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0148**	**0.0148**	**4.0000e-005**		**0.0158**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Beyond Food Mart

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	24.30	1000sqft	0.56	24,300.00	0
Other Non-Asphalt Surfaces	27.30	1000sqft	0.63	27,300.00	0
Convenience Market With Gas Pumps	16.00	Pump	0.20	6,589.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - per site plan

Construction Phase -

Vehicle Trips - per tia

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	2,258.80	6,589.00
tblLandUse	LotAcreage	0.05	0.20
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	204.47	87.60
tblVehicleTrips	SU_TR	166.88	87.60
tblVehicleTrips	WD_TR	542.60	87.60

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.7856	17.4426	13.8109	0.0268	5.8890	0.7659	6.6549	2.9774	0.7046	3.6820	0.0000	2,493.4397	2,493.4397	0.5408	0.0000	2,503.0484
2022	7.7698	1.4210	1.9510	3.4300e-003	0.0559	0.0820	0.1379	0.0148	0.0820	0.0968	0.0000	327.4650	327.4650	0.0193	0.0000	327.9479
Maximum	**7.7856**	**17.4426**	**13.8109**	**0.0268**	**5.8890**	**0.7659**	**6.6549**	**2.9774**	**0.7046**	**3.6820**	**0.0000**	**2,493.4397**	**2,493.4397**	**0.5408**	**0.0000**	**2,503.0484**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.7856	17.4426	13.8109	0.0268	2.6992	0.7659	3.4651	1.3529	0.7046	2.0575	0.0000	2,493.4397	2,493.4397	0.5408	0.0000	2,503.0484
2022	7.7698	1.4210	1.9510	3.4300e-003	0.0559	0.0820	0.1379	0.0148	0.0820	0.0968	0.0000	327.4650	327.4650	0.0193	0.0000	327.9479
Maximum	**7.7856**	**17.4426**	**13.8109**	**0.0268**	**2.6992**	**0.7659**	**3.4651**	**1.3529**	**0.7046**	**2.0575**	**0.0000**	**2,493.4397**	**2,493.4397**	**0.5408**	**0.0000**	**2,503.0484**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.66**	**0.00**	**46.96**	**54.29**	**0.00**	**42.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1701	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Energy	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
Mobile	2.1274	17.8695	24.4499	0.1120	8.9005	0.0796	8.9801	2.3813	0.0746	2.4559		11,446.1232	11,446.1232	0.6307		11,461.8911
Total	**2.2978**	**17.8734**	**24.4601**	**0.1120**	**8.9005**	**0.0800**	**8.9805**	**2.3813**	**0.0749**	**2.4562**		**11,450.8528**	**11,450.8528**	**0.6308**	**9.0000e-005**	**11,466.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1701	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Energy	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
Mobile	2.1274	17.8695	24.4499	0.1120	8.9005	0.0796	8.9801	2.3813	0.0746	2.4559		11,446.1232	11,446.1232	0.6307		11,461.8911
Total	**2.2978**	**17.8734**	**24.4601**	**0.1120**	**8.9005**	**0.0800**	**8.9805**	**2.3813**	**0.0749**	**2.4562**		**11,450.8528**	**11,450.8528**	**0.6308**	**9.0000e-005**	**11,466.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/27/2021	3/2/2021	5	2	
2	Grading	Grading	3/3/2021	3/8/2021	5	4	
3	Building Construction	Building Construction	3/9/2021	12/13/2021	5	200	
4	Paving	Paving	12/14/2021	12/27/2021	5	10	
5	Architectural Coating	Architectural Coating	12/28/2021	1/10/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 1.19

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 9,884; Non-Residential Outdoor: 3,295; Striped Parking Area: 3,096 (Architectural Coating – sqft)

OffRoad Equipment

Beyond Food Mart - Riverside-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	24.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041		1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**5.7996**	**0.7654**	**6.5650**	**2.9537**	**0.7041**	**3.6578**		**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0372	0.0224	0.2387	7.7000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		76.4155	76.4155	1.7700e-003		76.4596
Total	**0.0372**	**0.0224**	**0.2387**	**7.7000e-004**	**0.0894**	**5.3000e-004**	**0.0900**	**0.0237**	**4.9000e-004**	**0.0242**		**76.4155**	**76.4155**	**1.7700e-003**		**76.4596**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**2.6098**	**0.7654**	**3.3752**	**1.3292**	**0.7041**	**2.0333**	**0.0000**	**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0372	0.0224	0.2387	7.7000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		76.4155	76.4155	1.7700e-003		76.4596
Total	**0.0372**	**0.0224**	**0.2387**	**7.7000e-004**	**0.0894**	**5.3000e-004**	**0.0900**	**0.0237**	**4.9000e-004**	**0.0242**		**76.4155**	**76.4155**	**1.7700e-003**		**76.4596**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**4.9143**	**0.6379**	**5.5522**	**2.5256**	**0.5869**	**3.1125**		**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0372	0.0224	0.2387	7.7000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		76.4155	76.4155	1.7700e-003		76.4596
Total	**0.0372**	**0.0224**	**0.2387**	**7.7000e-004**	**0.0894**	**5.3000e-004**	**0.0900**	**0.0237**	**4.9000e-004**	**0.0242**		**76.4155**	**76.4155**	**1.7700e-003**		**76.4596**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2114	0.0000	2.2114	1.1365	0.0000	1.1365			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**2.2114**	**0.6379**	**2.8493**	**1.1365**	**0.5869**	**1.7234**	**0.0000**	**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0372	0.0224	0.2387	7.7000e-004	0.0894	5.3000e-004	0.0900	0.0237	4.9000e-004	0.0242		76.4155	76.4155	1.7700e-003		76.4596
Total	**0.0372**	**0.0224**	**0.2387**	**7.7000e-004**	**0.0894**	**5.3000e-004**	**0.0900**	**0.0237**	**4.9000e-004**	**0.0242**		**76.4155**	**76.4155**	**1.7700e-003**		**76.4596**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0248	0.9174	0.1953	2.4900e-003	0.0640	1.8100e-003	0.0659	0.0184	1.7300e-003	0.0202		262.9732	262.9732	0.0218		263.5178
Worker	0.1117	0.0670	0.7162	2.3000e-003	0.2683	1.5800e-003	0.2698	0.0711	1.4600e-003	0.0726		229.2465	229.2465	5.3000e-003		229.3789
Total	**0.1365**	**0.9845**	**0.9115**	**4.7900e-003**	**0.3323**	**3.3900e-003**	**0.3357**	**0.0896**	**3.1900e-003**	**0.0928**		**492.2197**	**492.2197**	**0.0271**		**492.8967**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0248	0.9174	0.1953	2.4900e-003	0.0640	1.8100e-003	0.0659	0.0184	1.7300e-003	0.0202		262.9732	262.9732	0.0218		263.5178
Worker	0.1117	0.0670	0.7162	2.3000e-003	0.2683	1.5800e-003	0.2698	0.0711	1.4600e-003	0.0726		229.2465	229.2465	5.3000e-003		229.3789
Total	**0.1365**	**0.9845**	**0.9115**	**4.7900e-003**	**0.3323**	**3.3900e-003**	**0.3357**	**0.0896**	**3.1900e-003**	**0.0928**		**492.2197**	**492.2197**	**0.0271**		**492.8967**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830		1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	0.1467					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9206**	**7.7422**	**8.8569**	**0.0135**		**0.4153**	**0.4153**		**0.3830**	**0.3830**		**1,296.8664**	**1,296.8664**	**0.4111**		**1,307.1442**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0363	0.3880	1.2500e-003	0.1453	8.6000e-004	0.1462	0.0385	7.9000e-004	0.0393		124.1752	124.1752	2.8700e-003		124.2469
Total	**0.0605**	**0.0363**	**0.3880**	**1.2500e-003**	**0.1453**	**8.6000e-004**	**0.1462**	**0.0385**	**7.9000e-004**	**0.0393**		**124.1752**	**124.1752**	**2.8700e-003**		**124.2469**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830	0.0000	1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	0.1467					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9206**	**7.7422**	**8.8569**	**0.0135**		**0.4153**	**0.4153**		**0.3830**	**0.3830**	**0.0000**	**1,296.8664**	**1,296.8664**	**0.4111**		**1,307.1442**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0363	0.3880	1.2500e-003	0.1453	8.6000e-004	0.1462	0.0385	7.9000e-004	0.0393		124.1752	124.1752	2.8700e-003		124.2469
Total	**0.0605**	**0.0363**	**0.3880**	**1.2500e-003**	**0.1453**	**8.6000e-004**	**0.1462**	**0.0385**	**7.9000e-004**	**0.0393**		**124.1752**	**124.1752**	**2.8700e-003**		**124.2469**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.5435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**7.7624**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0233	0.0140	0.1492	4.8000e-004	0.0559	3.3000e-004	0.0562	0.0148	3.0000e-004	0.0151		47.7597	47.7597	1.1000e-003		47.7873
Total	**0.0233**	**0.0140**	**0.1492**	**4.8000e-004**	**0.0559**	**3.3000e-004**	**0.0562**	**0.0148**	**3.0000e-004**	**0.0151**		**47.7597**	**47.7597**	**1.1000e-003**		**47.7873**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.5435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**7.7624**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0233	0.0140	0.1492	4.8000e-004	0.0559	3.3000e-004	0.0562	0.0148	3.0000e-004	0.0151		47.7597	47.7597	1.1000e-003		47.7873
Total	**0.0233**	**0.0140**	**0.1492**	**4.8000e-004**	**0.0559**	**3.3000e-004**	**0.0562**	**0.0148**	**3.0000e-004**	**0.0151**		**47.7597**	**47.7597**	**1.1000e-003**		**47.7873**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.5435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**7.7480**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0218	0.0126	0.1374	4.6000e-004	0.0559	3.2000e-004	0.0562	0.0148	3.0000e-004	0.0151		46.0169	46.0169	9.9000e-004		46.0418
Total	**0.0218**	**0.0126**	**0.1374**	**4.6000e-004**	**0.0559**	**3.2000e-004**	**0.0562**	**0.0148**	**3.0000e-004**	**0.0151**		**46.0169**	**46.0169**	**9.9000e-004**		**46.0418**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.5435					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**7.7480**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0218	0.0126	0.1374	4.6000e-004	0.0559	3.2000e-004	0.0562	0.0148	3.0000e-004	0.0151		46.0169	46.0169	9.9000e-004		46.0418
Total	**0.0218**	**0.0126**	**0.1374**	**4.6000e-004**	**0.0559**	**3.2000e-004**	**0.0562**	**0.0148**	**3.0000e-004**	**0.0151**		**46.0169**	**46.0169**	**9.9000e-004**		**46.0418**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.1274	17.8695	24.4499	0.1120	8.9005	0.0796	8.9801	2.3813	0.0746	2.4559		11,446.1232	11,446.1232	0.6307		11,461.8911
Unmitigated	2.1274	17.8695	24.4499	0.1120	8.9005	0.0796	8.9801	2.3813	0.0746	2.4559		11,446.1232	11,446.1232	0.6307		11,461.8911

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	1,401.60	1,401.60	1401.60	4,173,598	4,173,598
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,401.60	1,401.60	1,401.60	4,173,598	4,173,598

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	100	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Non-Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
NaturalGas Unmitigated	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	40.0756	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.3000e-004**	**3.9300e-003**	**3.3000e-003**	**2.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**		**4.7148**	**4.7148**	**9.0000e-005**	**9.0000e-005**	**4.7428**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0400756	4.3000e-004	3.9300e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004		4.7148	4.7148	9.0000e-005	9.0000e-005	4.7428
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.3000e-004**	**3.9300e-003**	**3.3000e-003**	**2.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**		**4.7148**	**4.7148**	**9.0000e-005**	**9.0000e-005**	**4.7428**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1701	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Unmitigated	0.1701	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0207					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1487					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.4000e-004	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Total	**0.1701**	**6.0000e-005**	**6.9100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0148**	**0.0148**	**4.0000e-005**		**0.0158**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0207					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1487					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.4000e-004	6.0000e-005	6.9100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0148	0.0148	4.0000e-005		0.0158
Total	**0.1701**	**6.0000e-005**	**6.9100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0148**	**0.0148**	**4.0000e-005**		**0.0158**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B
HABITAT ASSESSMENT AND MULTIPLE SPECIES HABITAT CONSERVATION PLAN CONSISTENCY ANALYSIS
OCTOBER 27, 2020

WESTERN RIVERSIDE COUNTY HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

CASE FILE # CUP 2019-0042 & 0043
APN 418-122-028-6

CITY OF BEAUMONT, COUNTY OF RIVERSIDE, CALIFORNIA
(Township 3 South, Range 1 West, Section 10)

Prepared for:

Tabel Center, LLC

Prepared by:

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Report prepared by R. Hunter, L. Cardoso & R. Arnold

Project: #2020-3

October 27, 2020

TITLE PAGE

Date Report Updated:	**October 27, 2020**
Date Field Work Completed:	**May 12, 2020**
Report Title:	**Western Riverside Habitat Assessment and MSHCP Consistency Analysis**
Assessor's Parcel Number:	**APN 418-122-028-6**
Prepared for:	**Tabel Center LLC**
Prepared by:	**RCA Associates, Inc.** **15555 Main Street, #D4-235** **Hesperia, California 92345**
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SECTION 1: EXECUTIVE SUMMARY

This report contains the results of a habitat assessment and MSHCP consistency analysis conducted by RCA Associates, Inc on a 1.33-acre parcel located in the City of Beaumont, Riverside County, California. The purpose of the habitat assessment and MSHCP consistency analysis is to identify potential impacts to biological resources associated with construction of the proposed commercial project. The project will consist of 8-pump gas station, car wash tunnel, and a convenience store.

This report describes the results of the site visit conducted on May 12, 2020, which assessed the property for the potential to support special-status species, and the presence of other sensitive biological resources protected by local, state, and federal laws and regulations. This report also contains an evaluation of potential impacts to special-status species and sensitive biological resources which may occur as a result of the proposed Project, and the potential mitigation measures which may be required to compensate for those impacts. The assessment includes a review of pertinent literature, a review of the California Natural Diversity Data Base (CNDDB), field investigations, and analysis of potential impacts to biological resources.

SECTION 2: INTRODUCTION

At the request of the project proponent, RCA Associates, Inc., conducted a habitat assessment and MSHCP Consistency Analysis for the 1.33-acre parcel located in the City of Beaumont, Riverside County, California (Figures 1, 2, and 3). The proposed project will hereafter be referred to as the "project" or "project site."

2.1 Project Location

The project site is located at the southwest corner of the intersection of Sixth Street and Pennsylvania Avenue in the City of Beaumont, California 92223, (Township 3 South, Range 1 West, Section 10) (Figure 2). Existing commercial developments are located to the north, east, and west with vacant land to the south. The 1.33-acre site is composed of a single parcel (APN 418-122-028-6). The site appears to have been cleared of native vegetation several years ago; although, revegetation has occurred and the site now supports a disturbed plant community.

2.2 Project Description

The project proponent is proposing to construct a commercial business on the site (Appendix A, Figure 6). The development would include an 8-pump gas station, car wash tunnel, and a convenience store. Development activities would occur within the boundaries of the property, which as discussed above, has been previously disturbed (Figure 3). The site is not located within the Riverside County HCP fee area for Stephen's kangaroo rat (Riverside County Habitat Conservation Agency, 1995).

2.3 Covered Roads

The project does not propose the construction of or any improvements to any MSHCP Covered Roads as part of the proposed commercial project.

Section 3: ANALYSIS

RCA Associates, Inc. evaluated the project site in relation to the MSHCP areas including criteria cells, core habitat, linkages, and areas proposed for conservation. The MSHCP also requires a riparian/riverine and vernal pool habitat assessment within the project site which were conducted by a biologist from RCA Associates, Inc. According to the MSHCP, the documentation for the assessment shall include mapping and a description of the functions and values of the mapped areas with respect to the species listed in Section 6.1.2. In addition, protection of species associated with riparian/riverine areas and vernal pools also needs to be addressed if such habitat is present on the site.

3.1 Literature Review and Field Investigations

Prior to conducting the field investigations, a literature review was conducted of background data as well as the environmental setting of the project site. The literature reviewed included, but was not limited to, the United States Department of Agriculture (USDA 1971) Soil Survey for the project site, U.S. Fish, and Wildlife Service (USFWS) data sources, and the California Natural Diversity Database (CNDDB, 2020). The closest recorded location of sensitive species was determined through a five-mile radius query of the CNDDB (2020) (Appendix A, Table 1). A search of the CNDDB database was conducted for the Beaumont USGS quadrangle and the surrounding eight quadrangles (See Appendix A for results of CNDDB search.). The CNDDB database was reviewed to locate the previously recorded locations of sensitive plant and wildlife occurrences and determine the distance from the project site. Additionally, the Riverside County MSHCP was reviewed for additional information on the known occurrence of the species within Riverside County. The MSHCP Online Conservation Report Generator and Riverside County Land Information System (RCLIS) databases were queried to determine the specific requirements for compliance with the policies of the MSHCP as described in Volume 1, Chapter 6 Implementation Structure (RCIP 2004), i.e. Reserve Assembly (6.1.1); Riparian/Riverine and Vernal Pools (6.1.2); Narrow Endemic Plants (6.1.3); Urban/Wildlands Interface (6.1.4); and Additional Survey Needs (6.2.3).

RCA Associates, Inc. biologists Ryan Hunter and Lisa Cardoso surveyed the project site on May 12, 2020 from about 0900 to 1200 p.m. Weather conditions during the survey included about 50 percent cloud with temperatures ranging from high-50's to mid-60's °F. The entire project site was assessed to determine the extent of plant communities and to evaluate the presence of any areas which may have any jurisdictional features or may support riparian/riverine habitat. Parameters assessed included soil conditions, the presence of indicator species, slope, aspect, and hydrology.

3.2 Plant Communities

Plant communities on the site were initially evaluated using aerial photography and were evaluated on the ground using pedestrian surveys conducted by biologists from RCA Associates, Inc. on May 12, 2020. The plant communities within the project site were classified according to the California Department of Fish and Wildlife (CDFW) List of Terrestrial Natural Communities (2003) and descriptions provided in Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986) were also reviewed. Due to past disturbance of the site, the plants present on the site would be considered ruderal vegetation.

3.3 Riparian/Riverine Habitat, Vernal Pools and Fairy Shrimp

Aerial photography was reviewed prior to conducting the field investigations on May 2020. The aerial photographs were used to determine if any potential natural drainage features and water bodies that may be considered riparian/riverine habitat or which may be under the jurisdiction of either the U.S. Army Corps of Engineers (USACE) and/or CDFW were present on the site. In general, surface drainage features are typically indicated as blue-line streams on USGS maps, which are expected to exhibit evidence of water flow through the channel. Such areas are considered potentially riparian/riverine habitat and may be subject to State and federal regulatory authority as "Waters of the State" or "Waters" of the U.S. Under the MSHCP, riparian/riverine habitat is defined as lands which contain habitat dominated by trees, shrubs, persistent emergent, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby freshwater source, or areas with freshwater flow during all or a portion of the year.

Vernal pools are considered an important habitat in Southern California and provide critical habitat for various species, including State and federal listed spec is such as fairy shrimp. No vernal pools have been previously mapped for the site nor were any vernal pools observed during the May 2020 field investigations. The proposed project is not expected to impact any vernal pools nor will any fairy shrimp be impacted.

3.4 Plants

Plant species observed during the field survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Samples of some plant species were collected and returned to the lab for identification using taxonomical guides. A list of all species observed on the project site was compiled from the survey data (Appendix A, Table 1). The taxonomic nomenclature used in this study follows the California Native Plant Society (CNPS 2020).

3.5 Wildlife and Riparian Birds

Wildlife species detected during the field surveys were identified by sight, calls, tracks, scat, or other signs and were recorded in a field notebook. Field guides were used to assist with identification of species during surveys and included the Sibley Field Guide to Birds of Western North America (2017) and Burt and Grossenheider (1980) for mammals. Although common names of wildlife species are relatively well standardized, scientific names are used in this report and are provided in Table 2, Appendix A for reference.

3.6 Regional Connectivity/Wildlife Habitat Linkages

The analysis of wildlife habitat linkages associated with the Study Area is based on information compiled from literature, including MSHCP-mapped habitat linkages (Figure 3-2, Schematic Cores and Linkages Map in the MSHCP [2004]); analysis of aerial photographs; and direct observations (including sign, tracks and physical movement barriers, including recent development) made in the field during the May 2020 field investigations. This information was

crucial to assessing the relationship of the project site to large open space areas in the region. The discussions in this report are intended to focus on wildlife movement associated with the property and the immediate vicinity.

Wildlife habitat linkages mitigate the effects of habitat fragmentation by (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity; (2) providing escape routes from natural disasters, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss 1983, Fahrig and Merriam 1985, Simberloff and Cox 1987, Harris and Gallagher 1989). Wildlife linkages are landscape features that connect and link habitat patches or habitat cores with each other. They serve a similar purpose in that they are areas that allow for animal movement, but they may not have all the resources a particular species needs to complete its life cycle.

3.7 Project Relationship to Reserve Assembly

The subject property is not located within any Criteria Cells with the nearest Cell being in Subunit 1, Cell Group B, and Quadrant Number (1405) (Appendix A, Figure 4). This cell is roughly 1.5 miles to the southwest of the project site shown in MSHCP section (3.3.10). According to the RCMSHCP Reserve Assembly, a RCA review is not required since the property is not located within a Criteria Cell.

The MSHCP established habitat assessment requirements for certain species of plants, birds, mammals, and amphibians. The MSHCP Conservation Areas (3.2.2) may be described in terms of bioregions, vegetation, soils, patch size, and edge affected lands. In regards to bioregions, the site is located in a developed area of the City of Beaumont and is not within an area of public/quasi-public conserved lands or within any pre-existing conservation agreements. In addition, the site is not located within any lands that have been designated as American Indian Lands.

3.8 Public Quasi-Public Lands

According to the MSHCP in Section 3.2.1 (Figure 3-1, The MSHCP Plan Map), the site is not depicted a PQP land; furthermore, the project site is not located in an area designated as Rural Mountain Designation in the MSHCP Area, American Lands, Lake, Preexisting Conservation Agreements, or any wildlife areas. The project will therefore not have any impact on POP designated lands.

3.9 Additional Survey Needs and Procedures

Based on the results of the field investigations conducted on the 1.33-acre site in May 2020, it is the opinion of RCA Associates, Inc. that no additional surveys or procedures are required. As discussed above, the site has been significantly disturbed in the past and does not support any undisturbed native habitats, nor does it support any special status species. In addition, the site dos not support burrowing owl habitat.

SECTION 4: EXISTING CONDITIONS

4.1 Environmental Setting

The property site has been disturbed by past human activities and appears to have been cleared of native vegetation in previous years (Appendix A, Figure 5. The property supports a ruderal plant community and is relatively flat with no sloping areas. The project site is located within an area of the City of Beaumont that has been developed or disturbed over the last few decades. The property is bordered on the north, west, and east by an existing commercial community, there is a residential area to the southwest, and on the south/southeast are vacant lands (Figures 1 and 2).

4.2 Soils

According to the Soil Survey provided by the U.S. Department of Agriculture, the soil on the property consists of Ramona sandy loam soil (RaB2) usually located on 2 to 5 percent slopes, eroded (Figure 9). Ramona sandy loam has a water holding capacity of 8.5 to 9.5 inches, a moderately slow permeability, and a moderate hazard of erosion. The soil is not listed as a hydric soil (U.S. Department of Agriculture [USDA] National List of Hydric Soils, 2020).

4.3 Plant Communities

The site has been disturbed by past human activities and some clearing of native vegetation was removed in previous years (Appendix A, Figures 5 and 6). Various grass species, wall barley (*Hordeum murinum*), wild oat (*Avena fatua*), and red brome (*Bromus matritensis*), were the dominant species. Other plants scattered throughout the site include shortpod mustard (*Hirschfeldia incana*), cheeseweed mallow (*Malva parviflora*), and Russian pigweed (*Axyris amaranthoides*). Multiple ornamental trees and shrubs (unidentified) have been planted and line the western edge of the property, no shrubs were seen beyond this border into the property, and only two trees were observed on the site, both being Tree of Heaven (*Ailanthus altissima*). A compendium of all plant species observed during the May 2020 survey is provided in Table 1.

4.4 Jurisdictional Waters

The United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill material into waters of the United States, and the State of California also regulates waters of the State and streambeds under the preview of regional water quality boards and CDFW jurisdiction. These waters include wetlands and non-wetland bodies of water that meet specific criteria. No jurisdictional areas were observed on the site, nor were any riparian habitats observed. In addition, plant species typically associated with jurisdictional and/or riparian areas (e.g., persistent emergent, emergent mosses, willows, and sedges, etc.) were not observed.

4.5 Nesting and Riparian Birds

The property contains marginal nesting bird habitat for avian species given the presence of few trees and shrubs along the southern, eastern, and western edges of the site. Nesting birds are protected under section 3503 of the CDFW code and/or the Migratory Bird Treaty Act (MBTA). A few common bird species were observed within the project area during the surveys including ravens (*Corvus corax*), Anna's hummingbird (*Calypte anna*), mourning dove (*Zenaida macroura*), and house sparrow (*Passer domesticus)*. All bird species observed are included in the faunal compendium in Appendix A, Table 2.

4.6 Burrowing Owl

<u>The project site is not located within the MSHCP Additional Survey Areas for Burrowing Owl.</u> In addition, based on a review of the CNDDB and the results of the field investigations, none of the species covered under the MSHCP have any potential for occurring on the property. No additional surveys are recommended.

4.7 Federal and State Listed Species

There are several special status wildlife species which have been documented in the region and

those species occurring in the Beaumont Quadrangle and the surrounding eight quadrangles. The CNDDB tables for these quadrangles are provided in Appendix A and lists the Federal and State listed species, as well as other special status wildlife species.

There are eighteen federal and/or State listed wildlife species which have been documented in the region including southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), southern California legless lizard (*Anniella stebbinsi*), pallid bat (*Antrozous pallidus*), orange-throated whiptail (*Aspidoscelis hyperythra*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), Stephen's kangaroo rat (*Dipodomys stephensii*), loggerhead shrike (*Lanius ludovicianus*), western yellow bat (*Lasiurus xanthinus*), San Diego desert wood rat (*Neotoma lepida intermedia*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), coast horned lizard (*Phrynosoma blainvillii*). purple martin (*Progne subis*), yellow warbler (*Setophaga petechia*), western spadefoot (*Spea hammondii*), American badger (*Taxidea taxus*), and least bell's vireo (*Vireo bellii pusillus*). There is one federal and/or State listed invertebrate occuring in the region which is the crotch bumble bee (*Bombus crotchii*). Each of the above listed species has specific habitat requirements in order to support populations of the species, and the probability of the site supporting any of these species is discussed in Section 6.3.

There are fourteen federal and/or State listed plants that have been documented in the region including chaparral sand-verbena (*Abronia villosa var. aurita*), Yucaipa onion (*Allium marvinii*), Horn's milk-vetch (*Astragalus hornii var. hornii*), Coachella Valley milk-vecth (*Astragalus lentiginosus var. coachellae*), Jaeger's milk-vetch (*Astragalus pachypus var. jaegeri*), Palmer's mariposa-lily (*Calochortus palmeri var. palmeri*), Plummer's mariposa-lily (*Calochortus plummerae*), Payson's jewelflower (*Caulanthus simulans*), smooth tarplant (*Centromadia pungens ssp. laevis*), Parry's spineflower (*Chorizanthe parryi var. parryi*), Mojave tarplant (*Deinandra mohavensis*), mesa horkelia (*Horkelia cuneata var. puberula*), spiny-haired blazing star (*Mentzelia tricuspis*), and narrow-leaf sandpaper-plant (*Petalonyx linearis*). The probability of any of these plants occurring on the site is discussed in Section 6.3.

4.8 Wildlife Species of Special Concern and Special Status Plants

Focused surveys were not conducted for any of the species of special concern given the very disturbed conditions throughout the site. In terms of the special status plants which have been documented in the region, these plants are unlikely to occur on the site given the past disturbances which have occurred during previous years (Appendix A, CNDDB table).

SECTION 5: WESTERN RIVERSIDE COUNTY MSHCP CONSISTENCY ANALYSIS

5.1 MSHCP Requirements

The purpose of this discussion is to provide an analysis of the proposed project with respect to compliance with biological aspects of the Western Riverside County MSHCP. Specifically, this analysis evaluates the proposed project with respect to the project's compliance with MSHCP Reserve Assembly Requirements (Section 6.1.1); Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (Section 6.1.2); Protection of Narrow Endemic Plant Species (Section 6.1.3); Guidelines Pertaining to the Urban/Wildlands Interface (Section 6.1.4), and Additional Survey Needs and Procedures (Section 6.3.2).

5.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

None of the riparian/riverine species listed in Section 6.1.2 of the MSHCP were found on the property nor were any riparian plant species observed during the field investigations. In addition, there are no features on the site that meet the MSHCP definition of vernal pools. In order to be considered a vernal pool under the MSHCP, a feature must be a wetland (based on the presence of hydrophytic vegetation, hydric soil, and wetland hydrology). The feature must also have a natural origin. No vernal pools were observed during the field investigations on the project site; consequently, the site does not support suitable habitat for fairy shrimp. The lack of suitable habitat for fairy shrimp is due to the soil that is made up of sandy loam soil which cannot hold water for a long enough duration to allow for the formation of vernal pools. Therefore, the site does not support any sensitive plants that are associated with wetland features. Other non-vernal pool features such as depressions, drainages, and road ruts, which may provide habitat for fairy shrimp, were absent from the site. It is RCA Associates' opinion that the site lacks suitable habitat for fairy shrimp. In addition, no riparian/riverine habitat is present on the site and plant species typically associated with riparian/riverine areas were not present on the property.

5.4 Jurisdictional Waters

No potential jurisdictional waters (i.e., streams, ponds, lakes, etc.) were observed on the site during the May 2020 field investigations.

5.5 Protection of Narrow Endemic Plant Species

The project site is not located within the MSHCP Narrow Endemic Plant Species Survey Area (NEPSSA); therefore, focused plant surveys were not conducted for species identified under Section 6.1.3 of the MSHCP. In addition, the property has been disturbed by past human activities and is very unlikely to support any rare plants at the present time. No focused surveys for rare plants are required and the project is consistent with the Narrow Endemic Plant Species requirements of the MSHCP.

5.6 Guidelines Pertaining to the Urban/Wildland Interface

The MSHCP Urban/Wildland Interface Guidelines (6.1.4) are intended to address indirect effects associated with locating development in proximity to MSHCP Conservation Areas. The project site is not located in any Criteria Cells. There are several main biological issues for this area including: maintain large blocks of habitat for large mammal movement between the northern and southern sections of the San Bernardino National Forest, conserve Potrero Creek and associated alluvial fan sage scrub, conserve populations of scattered San Bernardino Kangaroo Rat in the tributaries of the San Jacinto River, maintain core areas and linkages for bobcat, mountain lion, and Stephens Kangaroo Rat.

Given the location of the site in a developed area, and past human disturbances which have occurred on the site, the proposed project is not expected to result in any significant indirect impacts to special-status biological resources. Implementation of Best Management Practices (BMPs) are only required if Conservation Areas are “in proximity” of the project site; however, BMPs may be required as we do not know the definition of “proximity” under the RCMSHCP.

5.7 Wildlife Habitat Linkage

According to the MSHCP (Figure 3-2: Schematic Cores and Linkages Map), there are no documented terrestrial migration corridors in the immediate vicinity of the project site. Furthermore, the project site is within a developed portion of the County and there are numerous existing residential and commercial developments in the immediate area. The site does not provide any wildlife corridors which are used for migration, movement or dispersal of wildlife.

5.8 Additional Survey Needs and Procedures

The project site is not located within the MSHCP Additional Survey Areas for Burrowing Owl. Furthermore, no surveys will be required for amphibians, Criteria Area Species, mammals, or Special Linkage Areas (Figure 7).

SECTION 6: PROJECT IMPACTS AND MITIGATION

6.1 Impacts Per Plant Community

The proposed project will impact approximately 1.33-acres of ruderal vegetation. Loss of the existing ruderal vegetation would also affect some wildlife species; although, the number of species that would be impacted is relatively low given the small size of the parcel and the absence of any extensive areas of native vegetation.

6.2 Nesting Birds

There is relatively low potential for nesting birds to utilize the few shrubs on the site and the trees along the edge of the property. Potential impacts to nesting birds can be eliminated or significantly reduced if vegetation suitable for nesting birds is removed outside of the nesting bird season. The nesting season for birds typically occurs from February 15th to August 31st. Therefore, vegetation removal activities should be conducted outside of the nesting bird season, if possible. If grading and clearing activities must occur during the nesting season, a nesting bird survey should be conducted within seven days prior to the start of any ground disturbing activities to determine if any nesting birds occur within the project site. If nesting birds are not found within the project site, no further actions will be required. If nesting birds are observed, no impacts shall occur within 250 feet (500 feet for raptors) of any active nests. Also, construction activity may only occur within 250 feet of an active nest at the discretion of the project's biological monitor.

6.3 Federal and State Listed Species and Special Status Species

Based on the disturbed conditions of the 1.33-acre site, no focused surveys were deemed necessary for any federal or State listed species or any special status species. Based on a review of the CNDDB (2020) data for the area, no special status species are expected to present on the site.

6.4 Habitat Fragmentation and Wildlife Movement

As previously discussed, the property is located in an area where habitat has been fragmented due

to past development activities, agricultural activities, and on-going developments in the surrounding region. Therefore, the incremental loss of wildlife habitat associated with the proposed development is expected to be negligible. There are no wildlife corridors present on the site and the proposed project will not impede regional wildlife movement or impact any MSHCP-designated corridors or habitat linkages. Therefore, the proposed project is not expected to have any significant impacts in regard to habitat fragmentation and regional wildlife movement.

6.5 Riparian/Riverine Habitat, Vernal Pools and Jurisdictional Waters

The site does not support and riparian or riverine habitats. In addition, no depressions or areas where water would pool were observed within the project site which would be classified as vernal pools. Consequently, the site does not support suitable habitat for fairy shrimp. None of the riparian/riverine species listed in Section 6.1.2 of the MSHCP were found within the project site during the May 2020 field investigations, nor were any sensitive plants identified during the field investigations. Furthermore, no areas were observed which may be considered jurisdictional waters.

6.6 Local Policies and Ordinances

The proposed project will not conflict with or have any adverse impact on any local policies or ordinances.

SECTION 7: INFORMATION ON OTHER SPECIES

Delhi Sands Flower Loving Fly (*Rhaphiomidas terminates abdominalis*): The project site was inspected for habitat for the species as part of the MSHCP Habitat Assessment conducted on May 12, 2020. Prior to visiting the site, a literature search was conducted of the environmental setting of the site which included a review of the most recent records (CNDDB 2020) for the area. The site has been disturbed in the past and supports a ruderal plant community and does not support Delhi soils. Therefore, due to the lack of suitable soils (Delhi sand) the proposed project will not have any impacts on the species.

Species Not Adequately Conserved: The wildlife observed on the site and near the site during the field investigations were common species typically found in urban areas. Wildlife activity was moderate with avian species the primary species observed. Some of the common birds seen during the survey included western kingbird, dove, hummingbirds, raven, and northern mockingbird.

SECTION 8: CONCLUSIONS

No listed or special status plant or wildlife species or sensitive habitats were observed within the project site during the field investigations conducted on May 12, 2020. The property does not contain any vernal pools or Urban/Wildlands interface areas. If any sensitive species are observed on the property during future activities, CDFW and USFWS (as applicable) should be contacted to discuss specific mitigation measures which may be required for the individual species. The RCMSHCP does allow for the "take" of covered species that have been adequately conserved as outlined in Section 9.2 of the MSHCP; however, as discussed above no covered species are present on the site.

SECTION 9: CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits, present the data and information required for this biological evaluation and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Fieldwork conducted for this assessment was performed by me or other biologists under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project.

Date: October 27, 2020 Signed: *Randall Arnold*

Work Performed By: Randall Arnold
President and Senior Biologist

Ryan Hunter
Environmental Scientist/Biologist

Lisa Cardoso
Biologist

SECTION 10: REFERENCES

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Appendix A

Figures and Tables

Table 1 - Plants observed on the site and known to occur in the area.

Note: The following Tables are not comprehensive lists of every plant or animal species which may occur in the area, but are a list of those common species which have been identified on the site or in the region by biologists from RCA Associates, Inc.

Common Name	Scientific Name	Comments
Shortpod Mustard	*Hirschfeldia incana*	Observed on-site
Wall Barley	*Hordeum murinum*	“
Fiddleneck	*Amsinckia tessellata*	“
Wild Oat	*Avena fatua*	“
Russian Pigweed	*Axyris amaranthiodes*	“
Ripgut Brome	*Bromus diandrus*	“
Red Brome	*Bromus rubens*	“
Storkbill	*Erodium botrys*	“
Tree of Heaven	*Ailanthus altissima*	“
Annual Yellow Sweet Clover	*Melilotus indicus*	“
Yellow Star Thistle	*Centaurea solstitialis*	“
Field Bindweed	*Convolvulus arvensis*	“
Meadow Salsify	*Tragopogon pratensis*	“
Ribwort Plantain	*Plantago lanceolata*	“
Cheeseweed Mallow	*Malva parviflora*	“
Prickly Lettuce	*Lactuca serriola*	“

Table 2 - Wildlife observed on the site and those species expected to the area.

Common Name	Scientific Name	Comments
Mammals		
Desert cottontail	*Sylvilagus auduboni*	Occurs in area
California ground squirrel	*Spermophilus beecheyi*	“
Coyote	*Canis latrans*	“
Deer mouse	*Peromyscus maniculatus*	May occur on-site.
California mouse	*P. californicus*	“
Botta’s pocket gopher	*Thomonys bottae*	“
Birds		
Raven	*Corvus corax*	Observed in area
Crow	*C. brachyrhynchos*	“
Northern mockingbird	*Mimus polyglottus*	“
Red-tail Hawk	*Buteo jamaicensis*	“
Rock pigeon	*Columba livia*	“
Western meadowlark	*Sturnella neglecta*	Occurs in area
Western kingbird	*Tyrannus verticalis*	“
Say’s Phoebe	*Sayornis saya*	“
California quail	*Callipepla Californica*	“
American robin	*Turdus migratorius*	“
Brewer’s blackbird	*Euphagus cyanocephalus*	“
Lark sparrow	*Chondestes grammacus*	“
Bullock’s oriole	*Icterus bullockii*	“
Sage sparrow	*Amphispiza belli*	“
Costa hummingbird	*Calypte costae*	“
Anna’s hummingbird	*Calypte amna*	Observed on-site.
Mourning dove	*Zenaida macroura*	“
Lesser goldfinch	*Spinus psaltria*	“
White-crowned sparrow	*Zonotrichia leucophrys*	May occur on-site.
House finch	*Carpodacus mexicanis*	“
Ash-throated flycatcher	*Myiarchus cinerascens*	May occur in area
Reptiles and Amphibians		
Gopher snake	*Pituphis melanolecus*	Occurs in area
Common garter snake	*Thamnophis sirtalis*	“
Granite spiny lizard	*Sceloporus orcuttii*	“
Side-blotched lizard	*Uta stansburiana*	May occur on-site.
Western fence lizard	*Sceloprus occidentalis*	“
Invertebrates		
Funereal duskywing	*Erynnis funeralis*	Observed on-site
Rough harvester ants	*Pogonomyrmex rugosus*	“

SOURCES:

(1) Blair, W.F. 1968. Vertebrates of the United States. McGraw-Hill, Inc. New York. 616 pp.

(2) Whitaker, J. O. 1980. The Audubon Society Field Guide to North American Mammals. A. A. Knopf, New York. 745 pp.

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Appendix B

Regulatory Background

REGULATORY BACKGROUND

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and State levels, depending on the magnitude of the threat to continued existence and existing knowledge of population levels.

CEQA GUIDELINES SECTION 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected and requires findings of significance if there would be substantial losses. Natural communities listed by CNDDB as sensitive are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well.

FEDERAL ENDANGERED SPECIES ACT

The U.S. Fish and Wildlife Service (USFWS) administers the federal Endangered Species Act (FESA) that provides a process for listing species as either threatened or endangered and the methods of protecting listed species. The FESA defines as “endangered” any plant or animal species that is in danger of extinction throughout all or a significant portion of its range. A “threatened” species is a species that is likely to become endangered in the near future. A

"proposed" species is one that has been officially proposed by USFWS in addition to the federal threatened and endangered species list.

Section 9 of the FESA prohibits "take" of threatened or endangered species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. The presence of any federally threatened or endangered species that are in a project area generally imposes severe constraints on development, particularly if the development would result in "take" of the species or its habitat. Under the regulations of the FESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act.

CALIFORNIA ENDANGERED SPECIES ACT

The CDFW administers the California Endangered Species Act (CESA). The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against taking, as defined above.

SECTION 3503 AND 3511 OF CALIFORNIA FISH AND WILDLIFE CODE

The CDFW administers the California Fish and Wildlife Code. There are particular sections of the Code that are applicable to natural resource management. For example, section 3503 of the Code states it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3511 of the Code lists fully protected bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species.

CALIFORNIA NATIVE PLANT PROTECTION ACT

The California Native Plant Protection Act (CNPPA) of 1977 (Fish and Wildlife Code Sections 1900–1913) is intended to preserve, protect, and enhance endangered or rare native plants in California and gives the CDFW authority to designate state endangered, threatened, and rare plants

and provides specific protection measures for identified populations. The Act also directs the California Fish and Game Commission to adopt regulations governing taking, possessing, propagation, and sale of any endangered or rare native plant.

Vascular plants listed as rare or endangered by the California Native Plant Society (2011), but which have no designated status or protection under federal or state endangered species legislation, are defined as follows:

• Rank 1A: Plants Believed Extinct.
• Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.
• Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere.
• Rank 3: Plants About Which More Information is Needed - A Review List.
• Rank 4: Plants of Limited Distribution - A Watch List.

NATURAL COMMUNITY CONSERVATION PLANNING PROGRAM

The Natural Community Conservation Program (NCCP) Act, Sections 2800-2840 of the state Fish and Game Code, authorized the preparation of NCCPs to protect natural communities and species while allowing a reasonable amount of economic development. The MSHCP, adopted by the County of Riverside on June 17, 2003, serves as a Habitat Conservation Plan (HCP) pursuant to the NCCP Act and pursuant to Section 10 (a)(1)(B) of the FESA.

APPENDIX C
CULTURAL RESOURCES TECHNICAL MEMORANDUM
MAY 18, 2020

Rincon Consultants, Inc.

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May 18, 2020
Project No: 20-09064

Michael Ramirez
Beyond Food Mart, Inc.
4300 Edison Avenue
Chino, California 91710
Via email: mramirez@beyondfoodmart.com

Subject: Cultural Resources Technical Memorandum for the 6th Street and Pennsylvania Gas Station and Convenience Store Project, City of Beaumont, Riverside County, California

Dear Mr. Ramirez:

Rincon Consultants, Inc. (Rincon) was retained by Beyond Food Mart, Inc. to complete a cultural resources study in support of the development of a gas station and convenience store on a vacant property located at 6th Street and Pennsylvania Avenue in the city of Beaumont, Riverside County, California. The purpose of this memorandum is to document the results of the tasks performed by Rincon, specifically, a cultural resources records search of the California Historical Resources Information System (CHRIS), historical map and aerial imagery review, Native American outreach, archival research and a cultural resources survey of the project site. This study was completed in accordance with the requirements of the California Environmental Quality Act (CEQA) and the City of Beaumont (City) is the lead agency.

Project Location and Description

The project site consists of an approximately 1.4-acre parcel located at the southwest intersection of 6th Street and Pennsylvania Avenue, city of Beaumont, Riverside County, California (Attachment A: Figure 1). The parcel is bounded by undeveloped land to the south, Pennsylvania Avenue to the east, 6th Street to the north and retail development to the west. The project site identifies as Assessor's Parcel Number (APN) 418-122-028-6 and is depicted on Township 03S, Range 01W, Section 10 of the United States Geological Survey *Beaumont* California 7.5-minute quadrangle (Attachment A: Figure 2). The proposed project involves the construction of a gas station, convenience store, drive through car wash and associated parking.

Environmental Setting

The project site is approximately 2,604 feet (794 meters) above mean sea level. The nearest water source is Noble Creek, located approximately 5 miles (8 kilometers) to the north. The soils within the project site include a Ramona sandy loam series that consists of well-drained soils formed in alluvium from predominately granitic rock sources (California Soil Resource Lab 2020). Vegetation within the project site consists of seasonal, non-native grasses.

Cultural Resources Records Search

On April 27, 2020, Rincon requested a records search of the California Historical Resources Information System (CHRIS) at the Eastern Information Center (EIC) located at University of California, Riverside. The purpose of the records search was to identify previously recorded cultural resources and previously conducted cultural resources studies within the project site and a 1.0-mile radius surrounding it. Results from the EIC were received on April 30, 2020. The search also included a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Historical Landmarks list, the Archaeological Determination of Eligibility (ADOE) list, and the California Built Environment Resources Directory (BERD). Results of the records search can be found in Attachment B of this memorandum.

Previous Studies

The EIC records search identified 46 previously conducted cultural resources studies within a 1.0-mile radius of the project site, none of which were located on the project site. Table 1 lists the previous studies within the records search radius.

Table 1 Previous Cultural Resources Studies within 1.0-Mile of the Project Site

Report Number	Author(s)	Year	Title	Relationship to Project Site
RI-01830	Mark Sutton	1984	*An Archaeological Assessment of Parcel 18132 Beaumont Area of Riverside County, California*	Outside
RI-02203	C.E. Drover	1987	*An Archaeological Assessment of the Hovchild Property, Riverside County, California*	Outside
RI-02210	J.J. Underwood, C.M. Cleland, and R. Apple	1986	*Preliminary Cultural Resources Survey Report for the US Telecom Fiber Optic Cable Project, From San Timoteo Canyon to Socorro, Texas: The California Segment*	Outside
RI-02350	Rebecca McCorkle Apple and Jan E. Wooley	1988	*MCI Rialto to El Paso Fiber Optics Project – Intensive Cultural Resource Survey – San Bernardino and Riverside Counties, California*	Outside
RI-02917	Davis McMillan	1989	*Cultural Resources of the Proposed Sewer System for the City of Beaumont, California*	Outside
RI-03002	Christopher E. Drover	1990	*Environmental Impact Evaluation: An Archaeological Assessment of Seneca Springs Project, Riverside County Beaumont, California*	Outside
RI-09421	Joan Brown and Juanita Shinn	1989	*Cultural Resources Literature Review for the 1,162 Acre Deutsch Specific Plan Project, Located in the City of Beaumont Riverside County, California*	Outside
RI-03997	Richard S. Shepard, Jeanette A. McKenna	1996	*A Phase I Cultural Resources Investigation of a 3-Acre Parcel and Associated Pipeline, Beaumont, Riverside County, California*	Outside
RI-04840	Carol Demcak	2002	*Report of Phase I Archaeological Assessment of a 23-Acre Parcel in Beaumont, Riverside County*	Outside

Report Number	Author(s)	Year	Title	Relationship to Project Site
RI-04841	Carol Demcak	2002	*Addendum: Report of Phase I Archaeological Assessment of a 23-Acre Parcel in Beaumont, Riverside County*	Outside
RI-05136	Gavin Archer and Marian Kearin	2003	*Cultural Resource Inventory and Paleontologic Assessment of Hovchild Property, City of Beaumont, County of Riverside, California*	Outside
RI-06256	Koral Ahmet and Evelyn Chandler	2006	*Cultural Resources Survey of a 29-Acre Parcel Located West of Manzanita Road Near the City of Beaumont, Riverside County, California*	Outside
RI-07052	McKenna et al.	2006	*A Cultural Resource Investigation of the Proposed A Gorgonio Village, Project Area, Approximately 23 Acres of Land in the City of Beaumont, Riverside County, California*	Outside
RI-7055	Bai Tang and Michael Hogan	2007	*Historical/Archaeological Resource Survey Report: Assessor's Parcel Number 419-170-031, in the City of Beaumont, Riverside County, California*	Outside
RI-07288	Mariam Dahdul, Daniel Ballester, and Laura Shaker	2007	*Identification and Evaluation of Historic Properties Recycled Water System in and Near the Cities of Beaumont and Calimesa, Riverside County, California*	Outside
RI-07364	Rachel Crews and Jay Sander	2007	*Archaeological and Paleontologic Monitoring of a 29.7-Acre project Area at the Northwest Corner of the First Street and Commerce Way Beaumont, Riverside County, California*	Outside
RI-07869	Stacey Jordan and Michael DeGiovine	2008	*Archaeological Survey Report for Southern California Edison Company Deteriorated Pole Replacement Project for a Total of Ten Poles on IDA 12KV (#4679978E and #4744631E), Oak Glen 12KV (#4744626E), Bryn Mawr 12KV (#4744645E), Stewart 4KV (#4760030E), Boulder 12KV (#4714250E, Lapins 12KV (4759904E), Mesa Grande 12KV (#4759915E), Conine 12KV (#4759921E) and Preston 12KV (#4759658E) Circuits and Removal of One Pole on Bench 12KV (#782504H) Circuit on Private Lands in Riverside and San Bernardino Counties, California (WO#6031-4800, AI#8- 4850, AI#8-4852)*	Outside
RI-08669	Wayne Bonner, Sarah Williams, and Kathleen Crawford	2011	*Letter Report: Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidates IE24366-A*	Outside
RI-08886	Bai Tang and Michael Hogan	2012	*Historical/Archaeological Resources Survey Report: Beaumont Distribution Center Project, City of Beaumont, Riverside County*	Outside

Report Number	Author(s)	Year	Title	Relationship to Project Site
RI-08977	Matthew DeCarlo and William Eckhardt	2011	*Cultural Resources inventory of Three Construction Yards and the Desert Center DC-2 Yard Distribution Alignment of the Southern California Edison (SCE) Devers-Palo Verde 2 (DPV2) Project, Riverside County, California*	Outside
RI-09183	Carrie Wills, Sarah Williams, and Kathleen Crawford	2014	*Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate IE04451A (CM451 Beaumont Civic Center), 550 East 6th Street, Beaumont, Riverside County, California*	Outside
RI-09309	David Brunzell	2014	*Cultural Resources Assessment of the Hertz Project, Beaumont, Riverside County, California (BCR Consulting Project No. TRF1401)*	Outside
RI-09460	Bai Tang and Michael Hogan	2015	*Phase I Historical/Archaeological Resource Survey Seasons at Beaumont Project City of Beaumont Riverside, California*	Outside
RI-09616	Don Perez	2014	*Cultural Resources Survey: Oak Valley/ Ensite #18231 (273990) Beaumont Avenue, Beaumont, Riverside County, California* 92223. SW 1/4 NW 1/4 S3 T3S R1W. EBI Project No. 61142405	Outside
RI-09669	Carrie Wills, Sarah Williams, and Kathleen Crawford	2015	*Cultural Resource Records Search for Cellco Partnership and their Controlled Affiliates as Verizon Wireless Candidate 'Lotus', 40 Pennsylvania Avenue, Beaumont, Riverside County, California*	Outside
RI-09984	Roger Mason and Wayne Bonner	1998	*Cultural Resources Records Search and Literature Review for a Pacific Bell Mobile Services Telecommunications Facility: CM 451-11 city of Beaumont, Riverside County, California*	Outside
RI-10449	Gabriel Ocampo	2018	*Archaeological Sensitivity Assessment* RV90XSB14A / *9CAB012642A, E. 6th Street & Palm Avenue, Beaumont, Riverside County, California 92223, EBI Project Number: 6117007121, TCNS Number 165348*	Outside
RI-10461	William Eckhardt, Matthew DeCarlo, Doug Mengers, Sherri Andrews, Don Laylander, and Tony Quach	2015	*Archaeological Investigations and Monitoring for the Construction of the Devers-Palo Verde No. 2 Transmission Line Project, Riverside County, California*	Outside
RI-10478	Jeanette McKenna	2018	*A Phase I CEQA/Class III NEPA (NHPA Section 106) Investigation for the 6th/Maple Septic Conversion Project in the City of Beaumont, Riverside Co., California*	Outside
RI-10499	David Brunzell	2018	*Cultural Resources Assessment Beaumont Cherry Valley Water District Pipeline Replacement Project Riverside County, California*	Outside

Report Number	Author(s)	Year	Title	Relationship to Project Site
RI-10502	Kathleen Crawford	2015	*Direct APE Historic Architectural Assessment for the Cellco Partnership and its Controlled Affiliates Doing Business as Verizon Wireless Candidate 'Lotus', 40 Pennsylvania Avenue, Beaumont, Riverside County, California*	Outside
RI-10617	Sarah Williams, Carrie Wills, and Kathleen Crawford	2018	*Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC IE04451A (CM451 Beaumont Civic Cent), 550 East Sixth Street, Beaumont, Riverside County, California*	Outside

Source: Eastern Information Center 2020

Previously Recorded Cultural Resources

The EIC records search identified 148 previously recorded cultural resources within a 1.0-mile radius of the project site. No cultural resources were identified on the project site. Of the 148 resources in the 1.0-mile search radius, 140 were historic-period buildings, two are historic-period structures, five are historic-period archaeological sites, and one was a prehistoric-period archaeological site (CA-RIV-4038). A full list of the resources can be found in Attachment B.

CA-RIV-4038 was recorded in 1990 as a low density lithic and groundstone scatter and possible milling site. Although no granitic boulders were found, shattered granite fragments suggest they may have existed and were subsequently dynamited to facilitate the agricultural use of the site. The site has not been updated since its initial recording in 1990.

Review of Historical Topographic Maps and Aerial Imagery

Rincon reviewed available historical topographic maps and aerial imagery of the project site to determine past land use. Historical topographic maps from 1901 to 2018 depict the project site as undeveloped land (United States Geological Survey 2020a-i). Development to the north, south and west of the project site is seen as early as 1942, with structures and orchard planting to the east in 1953 (United States Geological Survey 2020c-d). Aerial imagery spanning from 1953 to 2016 show the project site as an undeveloped lot (University of California, Santa Barbara 2020, NETRonline 2020). Imagery as early as 1953, depicts development to the north, south, east, and west of the project site (University of California, Santa Barbara 2020).

Native American Outreach

Rincon contacted the Native American Heritage Commission (NAHC) on April 27, 2020, to request a search of the Sacred Lands File (SLF) and a contact list of Native Americans culturally affiliated with the project area. A response was received from the NAHC on April 30, 2020, stating the SLF search had been completed with “negative” results. On May 8, 2020, Rincon sent letters to 21 Native American contacts to request information on potential cultural resources in the project vicinity that may be impacted by project development. Attachment C provides the results of the outreach effort. As of the date of this memorandum, no responses have been received. This outreach does not constitute formal Assembly Bill (AB) 52 consultation. As required by CEQA, AB 52 consultation is performed between the lead

government agency and California Native American tribes who have requested notification of projects in their traditional area.

Field Survey

On May 8, 2020, Rincon conducted an archaeological pedestrian field survey of the project site. Transect intervals were spaced 10 to 15 meters apart. Exposed ground surfaces were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock [FAR]), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historical debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows and drainages were also visually inspected. Survey accuracy was maintained using a handheld Global Positioning Satellite unit and a georeferenced map of the project site. Site characteristics and survey conditions were documented using field records and a digital camera. Copies of the survey notes and digital photographs are maintained at the Rincon Riverside office.

Survey Results

No cultural resources were observed during the pedestrian field survey. Access to the site was conducted via a dirt turn-out on the eastern boundary from Pennsylvania Street (Attachment A: Figure 3). The majority of the project site is covered with non-native seasonal grasses and invasive weeds with less than 10 percent visibility (Attachment A: Figure 4). The only exposed ground surface was observed along the eastern boundary adjacent to the dirt access turnout and consisted of a medium brown silty-sand with coarse pebbles and small cobbles (Attachment A: Figure 3, Figure 5).

Findings and Recommendations

The records search performed for the project identified 148 previously recorded cultural resources; however, none of these resources are located on the project site. The majority of these resources are historic-period buildings and structures with one previously recorded prehistoric lithic archaeological site, CA-RIV-4038, consisting of a low density lithic and groundstone scatter and possible milling features within the 1.0-mile radius. The SLF search returned negative results and no responses from NAHC listed contacts have been received. A review of historical aerial photographs and topographic maps depict the project site as undeveloped land, with much of the surrounding area developed for at least 75 years. The archaeological pedestrian survey did not identify any prehistoric or historic-period cultural resources within the project site. The lack of surface evidence of archaeological resources does not preclude their subsurface existence. However, the absence of substantial archaeological resources within the immediate vicinity and distance to a stable water body suggest there is a low potential for encountering subsurface archaeological deposits.

Based on the results of the cultural resources technical memorandum, no significant cultural resources were identified in the project site that would be impacted by the project. Therefore, Rincon recommends a finding of ***no impact to historical resources*** under CEQA. Rincon recommends a standard unanticipated discovery measure, presented below, in the event of a discovery of cultural resources during the execution of the current project. The project is also required to adhere to state health and safety codes regarding the unanticipated discovery of human remains, detailed below.

Unanticipated Discovery of Cultural Resources

If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) should be contacted immediately to evaluate the find. If the discovery proves to be eligible for listing on the California Register of Historical Resources, additional work may be warranted, such as data recovery excavation, Native American consultation, and archaeological monitoring to mitigate any significant impacts under CEQA.

Human Remains

The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance.

Please do not hesitate to contact Rincon Consultants with any questions regarding this cultural resources study.

Sincerely,
Rincon Consultants, Inc.

Dustin Merrick, BA
Archaeologist

Breana Campbell-King, MA, RPA
Senior Archaeologist and Project Manager

Christopher A. Duran, MA, RPA
Principal

Attachments

Attachment A: Figures

Attachment B: Records Search Results

Attachment C: Native American Outreach

References

California Soil Resource Lab

2020 6th Street and Pennsylvania Avenue, Beaumont, California. Electronic document accessed April 27, 2020 from: https://casoilresource.lawr.ucdavis.edu/gmap/

National Park Service

1983 Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. Electronic document accessed January 24, 2020 from: http://www.nps.gov/history/local-law-Arch_Standards.htm

NETRonline

2020 6th Street and Pennsylvania Avenue, Beaumont, California. Electronic document accessed April 27, 2020 from: https://www.historicaerials.com/viewer

University of California, Santa Barbara [aerial photograph database]

1953 Map & Imagery Lab Frame Finder. Flight 4k-95. Electronic aerial photograph database accessed May 8, 2020 from: http://mil.library.ucsb.edu/ap_indexes/FrameFinder/

United States Geological Survey

2020a 1901, San Jacinto, 1:125000 topographic map. Electronic document accessed May 14, 2020 at: https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=97db96538a8ed9dc3eab3ed6a68e9c4b

2020b 1904, Southern California Sheet No. 1, 1:125000 topographic map. Electronic document accessed May 14, 2020 at: https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=7ea635181f87120ef1ee66a21cdf068a

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2020d 1953, Beaumont, 1:24000 topographic map. Electronic document accessed May 14, 2020 at: https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=f5aeb00ad5b5690093d6cda0c4017899

2020e 1956, Banning, 1:62500 topographic map. Electronic document accessed May 14, 2020 at: https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=bd7c3440582edfc87222d4a035653eb3

2020f 1960, Santa Ana, 1:250000 topographic map. Electronic document accessed May 14, 2020 at: https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=f367e1990de2865e0bf4887f37644144

2020g 1984, Palm Springs, 1:100000 topographic map. Electronic document accessed May 14, 2020 at: https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=e291487bfbaf694afe2686e533dd6f22

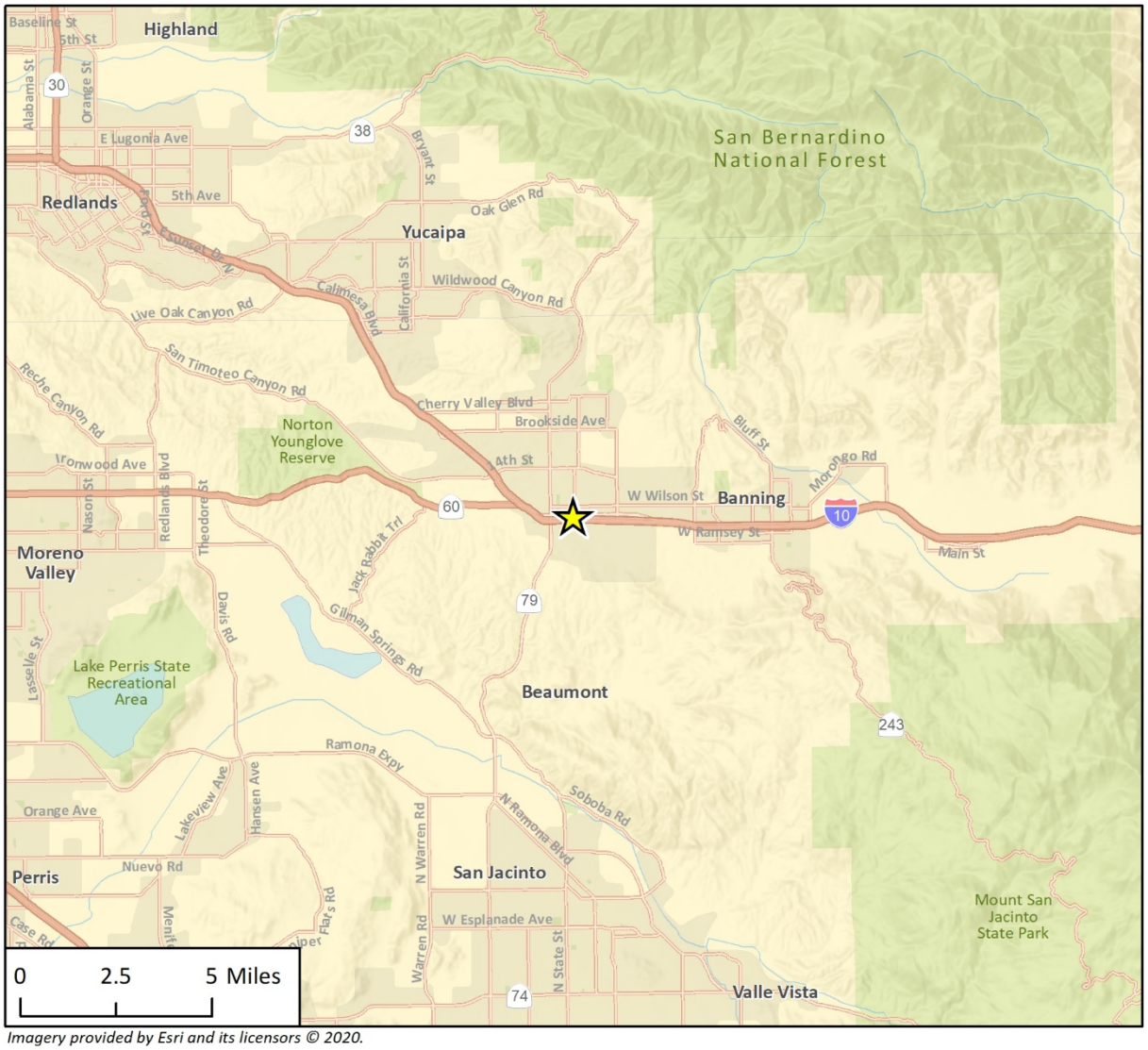
2020h 1996, Beaumont, 1:24000 topographic map. Electronic document accessed May 14, 2020 at: https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=68943ec67af9c0d41a183c0666988dfa

2020i 2018, Beaumont, 1:24000 topographic map. Electronic document accessed May 14, 2020 at: https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=1ab7844bdf44d5215fb796d82ec7d567

Attachment A

Figures

Figure 1 Regional Location Map



Imagery provided by Esri and its licensors © 2020.

Project Location

N

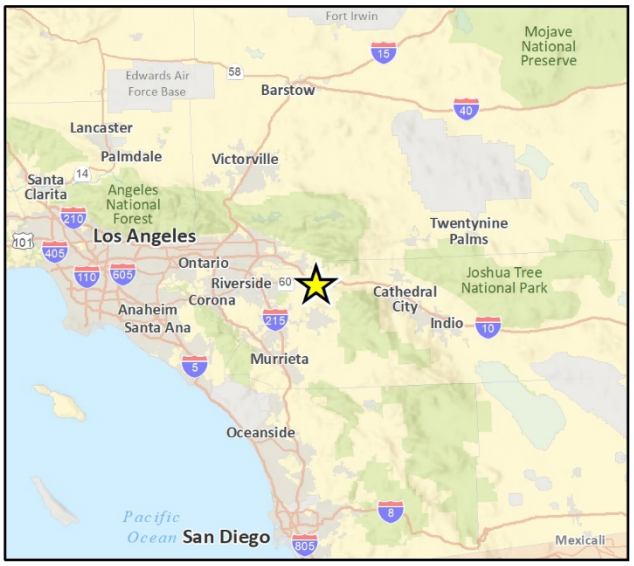
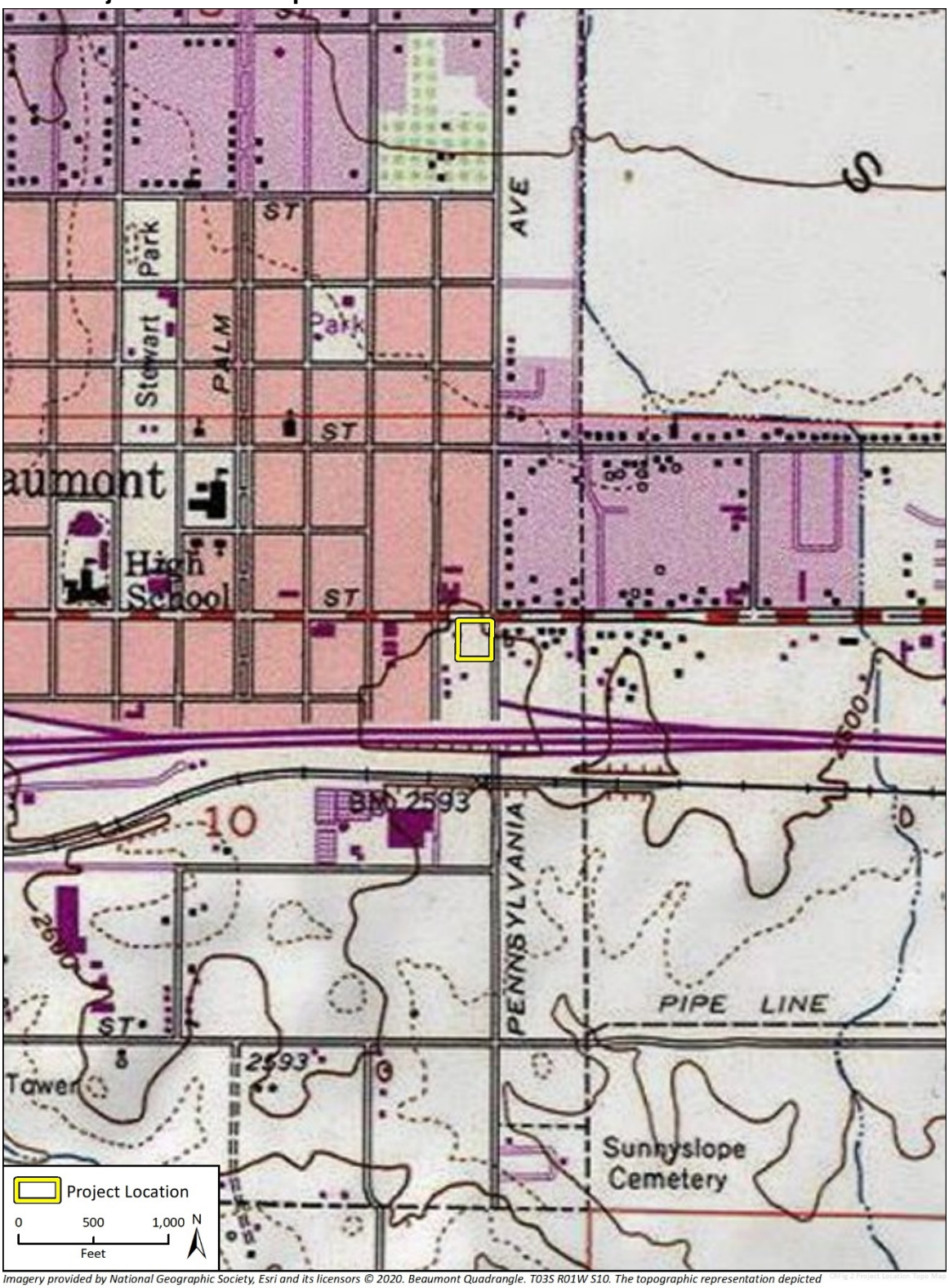


Figure 2 Project Location Map

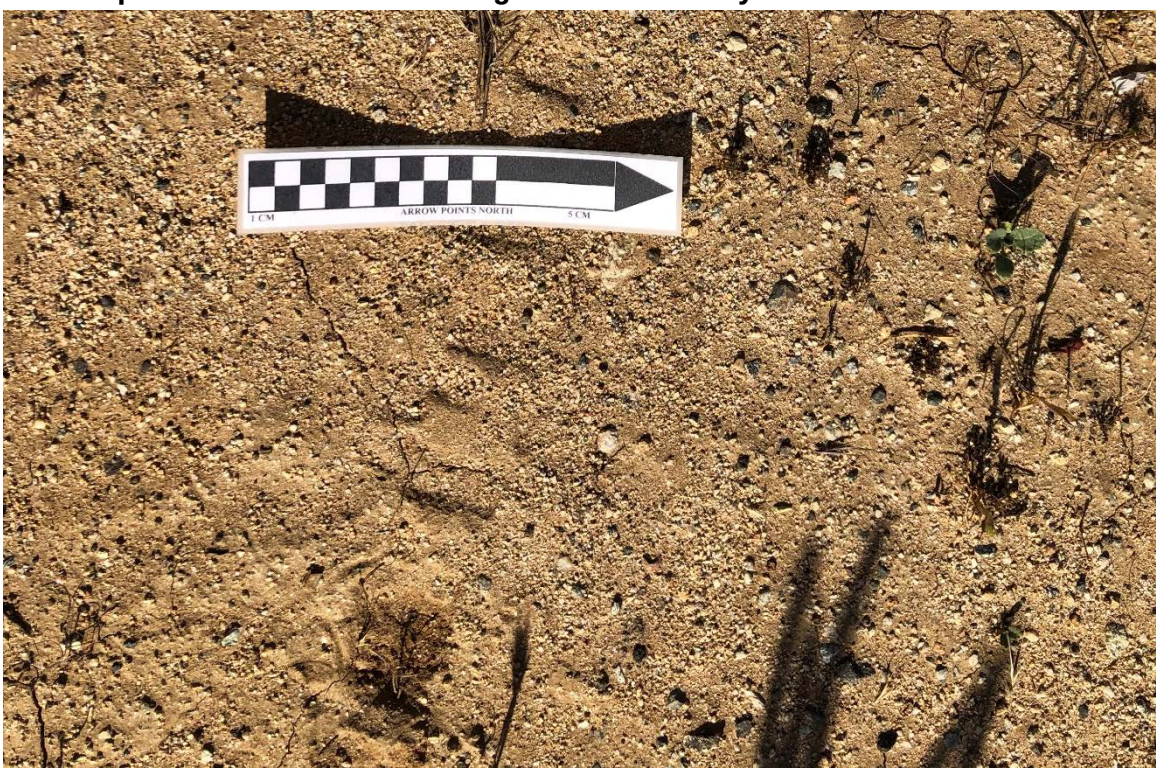


Imagery provided by National Geographic Society, Esri and its licensors © 2020. Beaumont Quadrangle. T03S R01W S10. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

Figure 3 Dirt Turn-out Along Eastern Boundary, Facing Northeast

Figure 4 Overview of Ground Visibility, Facing North

Figure 5 Exposed Ground Surface Along Eastern Boundary



Attachment B

Records Search Results

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-01830	NADB-R - 1082183; Voided - MF-1977	1984	SUTTON, MARK Q.	An Archaeological Assessment of Parcel 18132, Beaumont Area of Riverside County, California	ARCHAEOLOGICAL RESEARCH UNIT, U.C. RIVERSIDE	
RI-02203	NADB-R - 1082631; Voided - MF-2387	1987	DROVER, C.E.	An Archaeological Assessment of the Hovchild Property, Riverside County, California	AUTHOR(S)	
RI-02210	NADB-R - 1082640; Voided - MF-2396	1986	UNDERWOOD, J., J. CLELAND, C.M. WOOD, and R. APPLE	Preliminary Cultural Resources Survey Report for the Us Telecom Fiber Optic Cable Project, From San Timoteo Canyon to Socorro, Texas: The California Segment	DAMES AND MOORE	33-000053, 33-000159, 33-000893, 33-001634, 33-001767, 33-001768, 33-003075, 33-003076, 33-003077, 33-012818, 33-012819, 33-012820, 33-012821
RI-02350	NADB-R - 1082816; Voided - MF-2558	1988	Rebecca McCorkle Apple and Jan E. Wooley	MCI Rialto to El Paso Fiber Optics Project - Intensive Cultural Resource Survey - San Bernardino and Riverside Counties, California	Dames & Moore	33-000178, 33-003438, 33-003439, 33-003440, 33-003441, 33-003443, 33-003444, 33-003445, 33-003446, 33-003447, 33-003448
RI-02917	NADB-R - 1083274; Voided - MF-3127	1989	DAVIS, MCMILLAN	Cultural Resources Survey of the Proposed Sewer System for the City of Beaumont California.	RECON	33-002385, 33-002386
RI-03002	NADB-R - 1083545; Voided - MF-3225	1990	DROVER, CHRISTOPHER E.	ENVIRONMENTAL IMPACT EVALUATION: AN ARCHAEOLOGICAL ASSESSMENT OF SENECA SPRINGS PROJECT, RIVERSIDE COUNTY BEAUMONT, CALIFORNIA.	Consulting Archaeologist, Santa Ana, CA	33-004038
RI-03421	NADB-R - 1084088; Submitter - 89-1229; Voided - MF-3678	1989	BROWN, JOAN and JUANITA SHINN	Cultural Resources Literature Review for the 1,162 Acre Deutsch Specific Plan Project, Located In the City Of Beaumont, Riverside County, California	RMW PALEO ASSOCIATES	
RI-03997	NADB-R - 1085045; Submitter - 96.183; Voided - MF-4414	1996	SHEPARD, RICHARD S. and JEANETTE A. MCKENNA	A Phase I Cultural Resources Investigation of a 3-Acre Parcel and Associated Pipeline, Beaumont, Riverside County, California	MCKENNA ET AL/EIP ASSOCIATES	33-007898
RI-04840	NADB-R - 1086202	2002	DEMCAK, CAROL R.	Report Of Phase I Archaeological Assessment of a 23-Acre Parcel in Beaumont, Riverside County	ARCHAEOLOGICAL RESOURCE MANAGEMENT CORPORATION	
RI-04841	NADB-R - 1086203	2002	DEMCAK, CAROL R.	Addendum: Report Of Phase I Archaeological Assessment of a 23-Acre Parcel in Beaumont, Riverside County	ARCHAEOLOGICAL RESOURCE MANAGEMENT CORPORATION	
RI-05136	NADB-R - 1086499	2003	ARCHER, GAVIN H., and MARIAN L. KEARIN	Cultural Resource Inventory and Paleontologic Assessment Hovchild Property, City of Beaumont, County of Riverside, California	THE KEITH COMPANIES	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-06256	NADB-R - 1087619	2006	AHMET, KORAL and EVELYN CHANDLER	Cultural Resources Survey of a 29-Acre Parcel, Located West of Manzanita Road Near the City of Beaumont, Riverside County, California	ECORP CONSULTING, INC.	
RI-07052	Submitter - 10-06-12-1250	2006	McKenna et al.	A Cultural Resources Investigation, of the Proposed San Gorgonio Village, Project Area, Approximately 23 Acres, of Land in the City of Beaumont, Riverside County, California.	McKenna et al.	
RI-07055	Submitter - 2025	2007	Tang, Bai and Michael Hogan	Historical/Achaeological Resources Survey Report: Assessor's Parcel Number 419-170-031, in the City of Beaumont, Riverside County, California.	CRM Tech	
RI-07288	Submitter - CRM TECH Contract No. 2051	2007	Mariam Dahdul, Daniel Ballester, and Laura H. Shaker	Identification and Evaluation of Historic Properties Recycled Water System in and Near the Cities of Beaumont and Calimesa, Riverside County, California	CRM TECH, Riverside, CA	33-009498, 33-015720
RI-07364		2007	Crews, Rachel G. and Jay K. Sander	Archaeological and Paleontologic Monitoring of a 29.7-Acre Project Area at the Northwest Corner of the First Street and Commerce Way Beaumont, Riverside County, California	Chambers Group, Inc.	
RI-07869	Other - Contract No. 00708.08	2008	Jordan, Stacey C. and Michael M. DeGiovine	Archaeological Survey Report for Southern California Edison Company Deteriorated Pole Replacement Project for a Total of Ten Poles on IDA 12KV (#4679978E and #4744631E), Oak Glen 12KV (#4744626E), Bryn Mawr 12KV (#4744645E), Stewart 4KV (#4760030E), Boulder 12KV (#4714250E, Lapins 12KV (4759904E), Mesa Grande 12KV (#4759915E), Conine 12KV (#4759921E) and Preston 12KV (#4759658E) Circuits and Removal of One Pole on Bench 12KV (#782504H) Circuit on Private Lands in Riverside and San Bernardino Counties, California (WO#6031-4800, AI#8-4850, AI#8-4852)	ICF Jones & Stokes	
RI-08669	Submitter - IE24366-A	2011	Wayne H. Bonner, Sarah A. Williams, and Kathleen A. Crawford	Letter Report: Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidates IE24366-A	Michael Brandman Associates	
RI-08886	Submitter - Contract No. 2653A	2012	Bai "Tom" Tang and Michael Hogan	Historical/ Archaeological Resources Survey Report: Beaumont Distribution Center Project, City of Beaumont, Riverside County	CRM TECH	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-08977		2011	Matthew M. DeCarlo and William T. Eckhardt	Cultural Resources Inventory of Three Construction Yards and the Desert Center DC-2 Yard Distribution Alignment of the Southern California Edison (SCE) Devers-Palo Verde 2 (DPV2) Project, Riverside County, California	ASM Affiliates	33-019934
RI-09183		2014	Carrie D. Wills, Sarah A. Williams, and Kathleen A. Crawford	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate IE04451A (CM451 Beaumont Civic Center), 550 East 6th Street, Beaumont, Riverside County, California	Environmental Assessment Specialists, Inc.	
RI-09309		2014	David Brunzell	Cultural Resources Assessment of the Hertz Project, Beaumont, Riverside County, California (BCR Consulting Project No. TRF1401)	BCR Consulting	
RI-09460		2015	Bai 'Tom' Tang and Michael Hogan	Phase I Historical/Archaeological Resource Survey Seasons at Beaumont Project City of Beaumont Riverside, California	CRM Tech	
RI-09616	Other - EBI Project No. 61142405; Other - Oak Valley/Ensite #18231	2014	Don C. Perez, M.A., RPA	Cultural Resources Survey: Oak Valley / Ensite #18231 (273990) Beaumont Avenue, Beaumont, Riverside County, California 92223. SW 1/4 NW 1/4 S3 T3S R1W. EBI Project No. 61142405	EBI Consulting	
RI-09669	Other - Lotus Cultural Report	2015	Carrie D. Wills, Sarah A. Williams, and Kathleen A. Crawford	Cultural Resource Records Search for Cellco Partnership and their Controlled Affliates as Verizon Wireless Candidate 'Lotus', 40 Pennslyvania Avenue, Beaumont, Riverside County, California	Helix Environmental Planning Inc.	
RI-09984		1998	Roger D. Mason and Wayne H. Bonner	Cultural Resources Records Search And Literature Review For A Pacific Bell Mobile Services Telecommunications Facility: CM 451-11 City Of Beaumont, Riverside County, California	Chambers Group, inc.	
RI-10449	Other - EBI Project Number: 6117007121; Other - TCNS	2018	Gabriel Ocampo	Archaeological Sensitivity Assessment RV90XSB14A / 9CAB012642A, E. 6th Street & Palm Avenue, Beaumont, Riverside County, California 92223, EBI Project Number: 6117007121, TCNS Number 165348	EBI Consulting	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-10461	Other - 18142.00	2015	William T. Eckhardt, Matthew M. DeCarlo, Doug Mengers, Sherri Andrews, Don Laylander, and Tony Quach	Archaeological Investigations and Monitoring for the Construction of the Devers-Palo Verde No. 2 Transmission Line Project, Riverside County, California	ASM Affiliates	33-018128, 33-020289, 33-020290, 33-020294, 33-020317, 33-020318, 33-020319, 33-020320, 33-020321, 33-020322, 33-020323, 33-020324, 33-020325, 33-020336, 33-020409, 33-020410, 33-020975, 33-020976, 33-020977, 33-020978, 33-020979, 33-021001, 33-021014, 33-022103, 33-022105, 33-023799
RI-10478	Other - 12-17-06-1905	2018	Jeanette A. McKenna	A Phase I CEQA/Class III NEPA (NHPA Section 106) Investigation for the 6th/Maple Septic Conversion Project in the City of Beaumont, Riverside Co., California	McKENNA et AL.	33-028614
RI-10499	Other - MBI1801	2018	David Brunzell	Cultural Resources Assessment Beaumont-Cherry Valley Water District Pipeline Replacement Project Riverside County, California	BCR Consulting LLC	
RI-10502		2015	Kathleen Crawford	Direct APE Historic Architectural Assessment for the Cellco Partnership and its Controlled Affiliates Doing Business as Verizon Wireless Candidate 'Lotus', 40 Pennsylvania Avenue, Beaumont, Riverside County, California	HELIX	33-028622
RI-10617	OHP PRN - IE04451A (CM451 Beaumont Civic Cent)	2018	Sarah A. Williams, Carrie D. Wills, and Kathleen A. Crawford	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC IE04451A (CM451 Beaumont Civic Cent), 550 East Sixth Street, Beaumont, Riverside County, California	Environmental Assessment Specialists, Inc.	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-003445	CA-RIV-003445	Other - MCI Site #9; Other - Summit Station at	Site	Historic	AH04; AH07	1988 (R.M. Apple. T. Wahoff and K. Norwood, Dames & Moore, San Diego, CA.)	RI-02350
P-33-004038	CA-RIV-004038	Other - LL-1	Site	Prehistoric	AP02; AP04	1990 (C. E. Drover and D. M. Smith, Christopher Drover)	RI-03002
P-33-006094		Other - Ser. No. 33-2223-2	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006095		Other - Ser. No. 33-2223-3	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006096		Other - Hewell Home; Other - Ser. No. 33-2223-4	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006097		Other - Kiger Home; Other - Kimbell Home; Other - Ser. No. 33-2223-5	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006098		Other - Ser. No. 33-2223-6	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006099		Other - Ser. No. 33-2223-7; Other - Peter Beer Home	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006100		Other - Ser. No. 33-2223-8	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm)	
P-33-006101		Other - Thelma D Ward Home; Other - Joe Ward Home; Other - Ser. No. 33-2223-9	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006102		Other - Professor Dodd's Home; Other - Ser. No. 33-2223-10	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006103		Other - Ser. No. 33-2223-11	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	RI-09167
P-33-006104		Other - Ser. No. 33-2223-12	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006105		Other - Ridgeway Home; Other - Ser. No. 33-2223-13	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006106		Other - Ser. No. 33-2223-14	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006107		Other - Wili Barrett home; Other - Ser. No. 33-2223-15	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	RI-09167
P-33-006108		Other - "Pappy" Lewis Home; Other - Ser. No. 33-2223-16	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-006109		Other - Ser. No. 33-2223-17	Building	Historic	HP02	1983 (E. Burton, Riverside Country Historical Comm.)	RI-09167
P-33-006110		Other - Ser. No. 33-2223-18	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006112		Other - Kermit Lillich Home; Other - De Peel Home; Other - Ser. No. 33-2223-20	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006113		Other - Ser. No. 33-2223-21	Building	Historic	HP02	1983 (G. Bronson, Riv. Co. Historical Comm.)	
P-33-006115		Other - Samson Home; Other - Ser. No. 33-2223-23	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006116		Other - Ser. No. 33-2223-24	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006117		Other - Adams House; Other - Ray Adams Home; Other - Ser. No. 33-2223-25	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006118		Other - Ser. No. 33-2223-26	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006119		Other - Sam Maridith Home; Other - Ser. No. 33-2223-27	Building	Historic	HP02	1983 (M. Roberts, Riverside County Historical Comm.)	
P-33-006120		Other - Ser. No. 33-2223-28	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006121		Other - Hugh McDonald Home	Building	Historic	HP02	1983 (G. Bronson, Riverside County Historical Comm.)	
P-33-006122		Other - Ser. No. 33-2223-30	Building	Historic	HP02	1983 (M. Roberts, Riverside County Historical Comm.)	
P-33-006123		Other - Ser. No. 33-2223-31	Building	Historic	HP02	1983 (M. Roberts, Riverside County Historical Comm.)	
P-33-006124		Other - Koscheski Home; Other - Ser. No. 33-2223-32	Building	Historic	HP02	1983 (M. Roberts, Riverside County Historical Comm.)	
P-33-006131		Other - Ser. No. 33-2223-39	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006132		Other - Ser. No. 33-2223-40	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006141		Other - Ser. No. 33-2223-41	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-006142		Other - Ser. No. 33-2223-42	Building	Historic	HP02	1983 (Margaret Roberts, Riverside County Historical Commission)	
P-33-006143		Other - Ser No. 33-2223-43	Building	Historic	HP02	1983 (Margaret Roberts, Riverside County Historical Commission)	
P-33-006144		Other - Ser. No. 33-2223-44	Building	Historic	HP02	1983 (Margaret Roberts, Riverside County Historical Commission)	
P-33-006145		Other - McCoy Home	Building	Historic	HP02	1983 (Jim Warner, Riverside County Historical Commission)	RI-01010
P-33-006146		Other - Ser. No. 33-2223-46	Building	Historic	HP02	1983 (Margaret Roberts, Riverside County Historical Commission)	RI-08597
P-33-006147		Other - Ser. No. 33-2223-47	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006148		Other - Ser. No. 33-2223-48	Building	Historic	HP02	1983 (Margaret Roberts, Riverside County Histroical Commission)	
P-33-006149		Other - Ser. No. 33-2223-49	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006150		Other - Ser. No. 33-2223-50	Building	Historic	HP02	1983 (Margaret Roberts, Riverside County Historical Commission)	
P-33-006151		Other - Ser. No. 33-2223-51	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006152		Other - Obernolte Home; Other - Augustus Obernolte Home; Other - Ser. No. 33-2223-52	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006153		Other - Ser. No. 33-2223-53	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006154		Other - Epircopal Manse; Other - Ser. No. 33-2223-54	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006155		Other - Cronk Home; Other - Joe Elder Home 1893; Other - Ser. No. 33-2223-55	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006156		Other - Ser. No. 33-2223-56	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	RI-09167
P-33-006157		Other - The Cullough Home; Other - Ser. No. 33-2223-57	Building	Historic	HP02	1983 (Gwen Bronson, Riverside County Historical Commission)	
P-33-006160		Other - Sones Home; Other - Ser. No. 33-2223-60	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-006161		Other - Ser. No. 33-2223-61	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006162		Other - Kirkpatrick Home; Other - Ser. No. 33-2223-62	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006163		Other - Ser. No. 33-2223-63	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006164		Other - Ser. No. 33-2223-64	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006165		Other - First Christian Church; Other - Presbyterian Church; Other - Ser. No. 33-2223-65	Building	Historic	HP16	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006166		Other - Christian Church Manse; Other - George Summer Home; Other - Ser. No. 33-2223-66	Building	Historic	HP02; HP16	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006170		Other - Bogart House; Other - Ser. No. 33-2223-70	Building	Historic	HP03	1983 (Gwen Bronson, Riv. Co. Historical Comm.); 1993 (Virginia A. Ross, San Gorgonio Pass Historical Society)	
P-33-006171		Other - Ser. No. 33-2223-71	Building	Historic	HP02	1983 (Jim Warner, Riv. Co. Historical Comm.)	
P-33-006172		Other - Ser. No. 33-2223-72	Building	Historic	HP03	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006173		Other - Ser. No. 33-2223-73	Building	Historic	HP02	1983 (Riv. Co. Historical Comm., Riv. Co. Historical Comm.)	
P-33-006174		Other - Ser. No. 33-2223-74	Building	Historic	HP03; HP41	1983 (Jim Warner, Riv. Co. Historical Comm.)	
P-33-006175		Other - Ser. No. 33-2223-75	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006176		Other - Presbyterian Church; Other - Ser. No. 33-2223-76	Building	Historic	HP16	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006177		Other - Ser. No. 33-2223-77	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006178		Other - Ser. No. 33-2223-78	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006179		Other - Ser. No. 33-2223-79	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-006180		Other - Ser. No. 33-2223-80	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006181		Other - Ser. No. 33-2223-81	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006182		Other - Ser. No. 33-2223-82	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006183		Other - Ellen Martin Home Postmistress; Other - Ser. No. 33-2223-83	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006184		Other - Barker home; Other - Ser. No. 33-2223-84	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006185		Other - Original City Hall; Other - Ser. No. 33-2223-85	Building	Historic	HP02; HP13; HP14	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006186		Other - Houston House; Other - Ser. No. 33-2223-86	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006187		Other - Ser. NO. 33-2223-87	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006188		Other - Ser. No. 33-2223-88	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006189		Other - Ser. No. 33-2223-89	Building	Historic	HP02	1983 (Gwen Bronston, Riv. Co. Historical Comm.)	
P-33-006190		Other - True Home; Other - Ser. No. 33-2223-90	Building	Historic	HP02	1983 (Gwen Bronston, Riv. Co. Historical Comm.)	
P-33-006191		Other - Ser. Vo. 33-2223-91	Building	Historic	HP06	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006192		Other - Seventh Day Adventist Church; Other - Ser. No. 33-2223-92	Building	Historic	HP16	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006193		Other - Butler Home; Other - Ser. No. 33-2223-93	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006194		Other - Cable Home; Other - Ser. No. 33-2223-94	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006195		Other - Ser. No. 33-2223-95	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006197		Other - Ser. No. 33-2223-97	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-006198		Other - Ser. No. 33-2223-98	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006199		Other - William McDavis Home; Other - Ser. No. 33-2223-99	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006200		Other - Ser. No. 33-2223-100	Building	Historic	HP02	1983 (Jim Warner, Riv. Co. Historical Comm.)	
P-33-006201		Other - Ser. No. 33-2223-101	Building	Historic	HP02	1983 (Jim Warner, Riv. Co. Historical Comm.)	
P-33-006202		Other - Lynne Bebee Home; Other - Ser. No. 33-2223-102	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006203		Other - Ser. No. 33-2223-103	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006204		Other - Ser. No. 33-2223-104	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006205		Other - Ser. No. 33-2223-105	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006206		Other - Martin Home; Other - Ser. No. 33-2223-106	Building	Historic	HP02	1983 (wen Bronson, Riv. Co. Historical Comm.)	
P-33-006207		Other - Hershey Home; Other - King Home	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006208		Other - Ser. No. 33-2223-108	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006209		Other - Ser. No. 33-2223-109	Building	Historic	HP02	1983 (Jim Warner, Riv. Co. Historical Comm.)	
P-33-006211		Other - Precision Stamping; Other - Beaumont Bank	Building	Historic	HP06	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006212		Other - Beaumont Women's Club; Other - Ser. No. 33-2223-112	Building	Historic	HP38	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006213		Other - Ser. No. 33-2223-113	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006214		Other - Ser. No. 33-2223-114	Building	Historic	HP06	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006215		Other - Beaumont Civic Center; Other - Beaumont High School; Other - Sr. No. 33-2223-115	Building	Historic	HP12; HP14; HP15	1983 (Gwen Bronson, Riv. Co. Historical Comm.); 1999 (Judith Marvin, Foothill Resources, Ltd)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-006216		Other - Mohawk Service Station; Other - Ser. No. 33-2223-116	Building	Historic	HP06	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006217		Other - Ser. No. 33-2223-117	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006218		Other - Ser. No. 33-2223-118	Building	Historic	HP02	1983 (Jim Warner, Riv. Co. Historical Comm.)	
P-33-006220		Other - Heyton Home; Other - Ser. No. 33-2223-120	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006221		Other - Ser. No. 33-2223-121	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006222		Other - Burdick/Kuhn Home	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006223		Other - Harold Roach Home; Other - Ser. No. 33-2223-123	Building	Historic	HP02	1983 (Margaret Roberts, Riv. Co. Historical Comm.)	
P-33-006224		Other - Harold Roach Home; Other - Ser. No. 33-2223-123	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006225		Other - Dr. West Home; Other - Ser. No. 33-2223-125	Building	Historic	HP02	8383 (Jim Warner, Riv. Co. Historical Comm.)	
P-33-006226		Other - Lewis family home; Other - Ser. No. 33-2223-126	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006227		Other - W. G. McKinney home; Other - Ser. No. 33-2223-127	Building	Historic	HP02	1983 (Gwen Bronson, Riv. Co. Historical Comm.)	
P-33-006233		Other - Beaumont Carnegie Library; Other - Carnegie Library;	Building	Historic	HP14; HP15	1989 (Lucy Kortum, Sonoma State University)	
P-33-006735		Other - Ser. No. 33-1720-2-312	Building	Historic	HP02	0983 (M. Roberts, Riverside County Historical Comm.)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-009498	CA-RIV-006381	Other - Union Pacific Railroad, Southern Pacific Railroad; Other - C-Los Angeles-A-1; Other - UPRR, segment near Dillon Road and Grapefruit Blvd.; Other - SRI-5670; Other - S.P., L.A. and Salt Lake Railroad; Other - CA-IMP-3424H	Structure	Historic	HP39	1966 (Ashkar, S., Jones & Stokes); 2003 (Carrie Chasteen, Myra L. Frank & Associates); 2005 (Taniguchi, Christeen, Galvin & Associates); 2009 (Wilson, S. and K. Chimel, ICF Jones & Stokes); 2012 (Scott Kremkau, SRI); 2015 (T. Baurley and J.M. Sanka, L&L Environmental, Inc.); 2016 (Daneil Leonard, HDR); 2017 (P. Moloney, R. Elder, W. Blodgett, Applied EarthWorks, Inc.)	RI-04427, RI-04430, RI-04771, RI-05452, RI-06258, RI-06259, RI-06583, RI-06615, RI-06707, RI-07288, RI-07586, RI-07770, RI-07802, RI-07970, RI-08012, RI-08374, RI-08491, RI-08538, RI-08581, RI-08844, RI-08861, RI-09151, RI-09167, RI-09734, RI-10040, RI-10374, RI-10435, RI-10652, RI-10798, RI-10806
P-33-020721	CA-RIV-010642	Other - SRI-2369	Site	Historic	AH07; HP37	2011 (Joshua Trampier, Statistical Research, Inc.)	RI-09167
P-33-020723	CA-RIV-010645	Other - SRI-3444	Site	Historic	AH07	2011 (Joshua Trampier, Statistical Research, Inc.)	
P-33-023484		Other - LSA-SCE1110-S-71; Other - Southern California Edison - Memphis 12kV Distribution Line; Other - Telecommunications line	Structure	Historic	HP11	2013 (LSA, LSA Associates, Inc.); 2014 (Audry Williams, Southern California Edison International)	RI-10157, RI-10435
P-33-023485		Other - LSA-SCE110-S-82; Other - 885 Beaumont AVE	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023486		Other - LSA-SCE-110-S-83; Other - 915 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023487		Other - LSA-SCE110-S-84; Other - 925 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023488		Other - LSA-SCE110-S-85; Other - 949 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023489		Other - LSA-SCE110-S-86; Other - 963 Beaumont	Building	Historic	HP12	2013 (LSA, LSA Associates, Inc.)	
P-33-023490		Other - LSA-SCE110-S-87; Other - 977 Beaumont Ave	Building	Historic	HP06	2013 (LSA, LSA Associates, Inc.)	
P-33-023491		Other - LSA-SCE110-S-88; Other - 985 Beaumont Ave	Building	Historic	HP06	2013 (LSA, LSA Associates, Inc.)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-023492		Other - LSA-SCE110-S-89; Other - 1001 Beaumont Ave	Building	Historic	HP06	2013 (LSA, LSA Associates, Inc.)	
P-33-023493		Other - LSA-SCE110-S-90; Other - 1025 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Accosiates, Inc.)	
P-33-023494		Other - LSA-SCE110-S-91; Other - 1037 Beaumont Ave	Building	Historic	HP06	2013 (LSA, LSA Associates, Inc.)	
P-33-023495		Other - LSA-SCE110-S-92; Other - 1061 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023496		Other - LSA-SCE110-S-93; Other - 1077 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023497		Other - LSA-SCE110-S-94; Other - 1111 Beaumont Ave	Building	Historic	HP06	2013 (LSA, LSA Associates, Inc.)	
P-33-023498		Other - LSA-SCE110-S-95; Other - 1115 Beaumont Ave	Building	Historic	HP03	2013 (LSA, LSA Associates, Inc.)	
P-33-023499		Other - LSA-SCE110-S-96; Other - 1151 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023500		Other - LSA-SCE110-S-97; Other - 1155 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023501		Other - LSA-SCE110-S-98; Other - 1201 Beaumont Ave	Building	Historic	HP02; HP06	2013 (LSA, LSA Associates, Inc.)	
P-33-023502		Other - LSA-SCE110-S-99; Other - 1215 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023503		Other - LSA-SCE110-S-100; Other - 1217 Beaumont Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023515		Other - LSA-SCE110-S-112; Other - 884 Wellwood Ave	Building	Historic	HP03	2013 (LSA, LSA Associates, Inc.)	
P-33-023516		Other - LSA-SCE110-S-113; Other - 885 Wellwood Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023517		Other - LSA-SCE110-S-114; Other - 885 N California Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023522		Other - LSA-SCE110-S-119; Other - 147 W 9th St	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023523		Other - LSA-SCE110-S-120; Other - 227 W 9th St	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-023526		Other - LSA-SCE110-S-123; Other - 351 E 9th St	Building	Historic	HP03	2013 (LSA, LSA Associates, Inc.)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-33-023527		Other - LSA-SCE110-S-124; Other - 354 E 9th St	Building	Historic	HP02	2020 (LSA, LSA Associates, Inc.)	
P-33-023528		Other - LSA-SCE110-S-125; Other - 886 Euclid Ave	Building	Historic	HP02	2013 (LSA, LSA Associates, Inc.)	
P-33-026649	CA-RIV-012550	Other - Beaumont Plaza-1 (BP-1); Other - Foundation Remains and Wells	Site	Historic	AH02; AH05	2016 (J.M Sanka and W. Gillean, L&Lenvironmental, Inc.)	RI-09826
P-33-028614		Other - 6th Street, Beaumont/Banning, Riverside Co., CA; Other - Copamaricopa Trail; Other - Banning Trade Route; Other - Stage Route; Other - 6th Street	Site	Historic	HP37	2018 (McKenna et al., Jeanette A. McKenna, McKenna et al.)	RI-10478
P-33-028622		Other - Verizon Wireless Candidate "Lotus"; Other - Stewart Sunslope Cemetery	Building	Historic	HP40	2015 (K.A Crawford, Crawford Historic Services)	RI-10502

Attachment C

Native American Outreach

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd, Suite 100
Sacramento, CA 95814
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: 6th Street and Pennsylvania Gas Station and Convenience Store Project

County: Riverside

USGS Quadrangle Name: Beaumont 7.5'

Township: 03S Range: 01W Section(s): 10

Company/Firm/Agency: Rincon Consultants, Inc.

Contact Person: Mary Pfeiffer

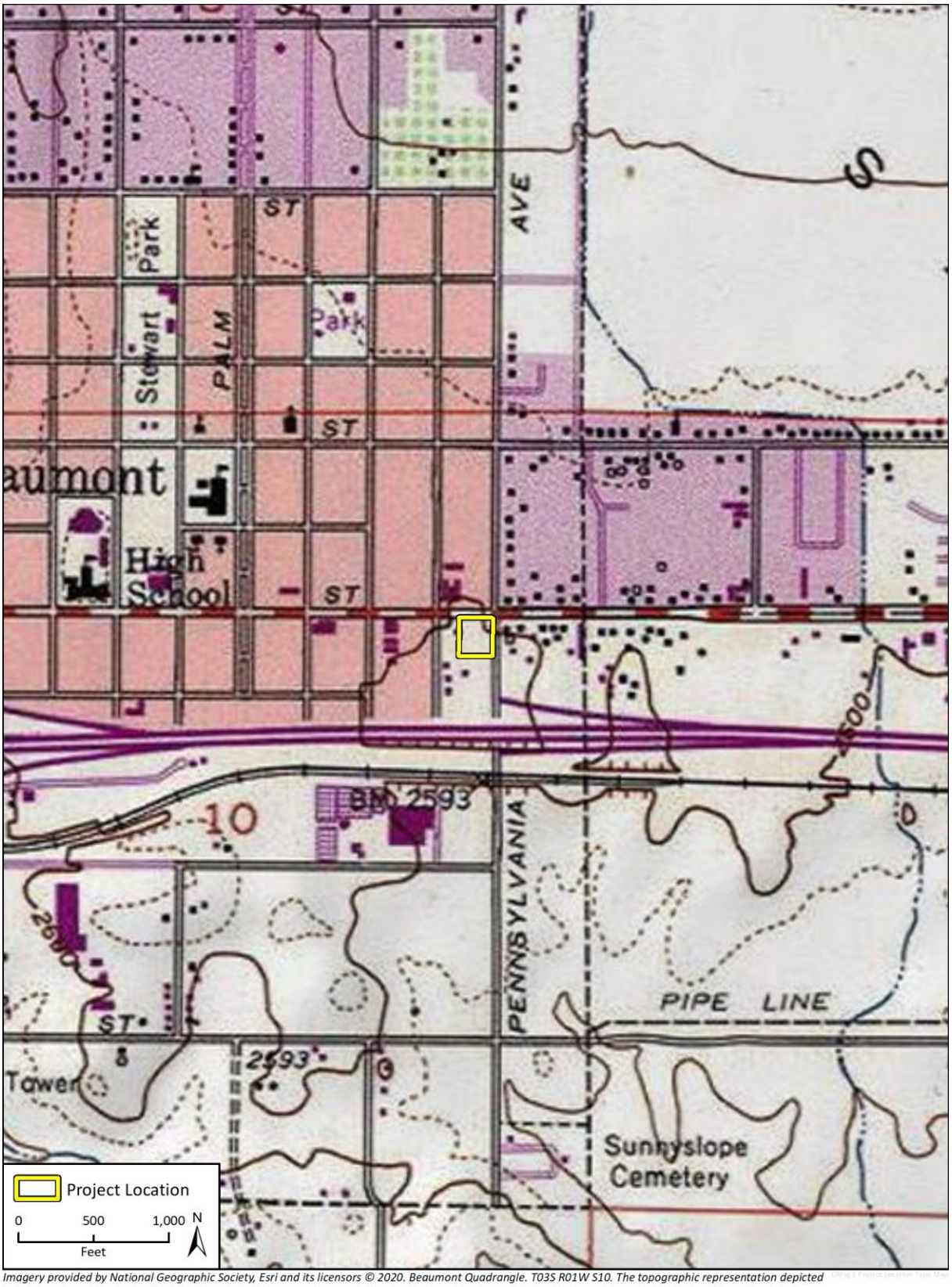
Street Address: 180 N Ashwood Avenue

City: Ventura Zip: 93003

Phone: (805) 644-4455 ext. 2052

Email: mpfeiffer@rinconconsultants.com

Project Description: The proposed project would involve the construction of a gas station and convenience store on a currently vacant 1.4-acre project site located in the city of Beaumont, Riverside County, California. Please see the attached project location map.



Imagery provided by National Geographic Society, Esri and its licensors © 2020. Beaumont Quadrangle. T03S R01W S10. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

NATIVE AMERICAN HERITAGE COMMISSION

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Pomo

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

April 30, 2020

Mary Pfeiffer
Rincon Consultants, Inc.

Via Email to: mpfeiffer@rinconconsultants.com

Re: 6th Street and Pennsylvania Gas Station and Convenience Store Project, Riverside County

Dear Ms. Pfeiffer:

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

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Riverside County
4/30/2020

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161
hhaines@augustinetribe.com

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880
jstapp@cabazonindians-nsn.gov

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
Anza, CA, 92539
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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 6th Street and Pennsylvania Gas Station and Convenience Store Project, Riverside County.

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APPENDIX D
FUEL CALCULATIONS

Beyond in Beaumont

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors **[1]**:

HP: 0 to 100	0.059	HP: Greater than 100	0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phas	Fuel Used (gallons)	Total Gallons
Graders	1	8	187	0.41	Site Prep	64.89	64.89
Other Material Handling Eqp.					Site Prep	0.00	0.00
Rubber Tired Dozer	1	7	247	0.4	Site Prep	73.17	73.17
Tractors/Loaders/Backhoes	1	8	97	0.37	Site Prep	33.77	33.77
Concrete/Industrial Saws					Grading	0.00	0.00
Graders	1	6	187	0.41	Grading	97.34	97.34
Excavators					Grading	0.00	0.00
Rubber Tired Dozer	1	6	247	0.4	Grading	125.44	125.44
Tractors/Loaders/Backhoes	1	7	97	0.37	Grading	59.09	59.09
Bore/Drill Rig					Building Con.	0.00	0.00
Cranes	1	6	231	0.29	Building Con.	4252.53	4252.53
Forklifts	1	6	89	0.2	Building Con.	1255.97	1255.97
Generator Sets	1	8	84	0.74	Building Con.	5848.01	5848.01
Other Construction Eqp.					Building Con.	0.00	0.00
Rubber Tired Dozer					Building Con.	0.00	0.00
Tractors/Loaders/Backhoes	1	6	97	0.37	Building Con.	2532.40	2532.40
Welders	3	8	46	0.45	Building Con.	1947.46	5842.37
Cement and Motor Mixers	1	6	9	0.56	Paving	17.78	17.78
Concrete/Industiral Saws					Paving	0.00	0.00
Dumpers/Tenders					Paving	0.00	0.00
Graders					Paving	0.00	0.00
Pavers	1	6	130	0.42	Paving	173.30	173.30
Paving Equipment	1	8	132	0.36	Paving	201.10	201.10
Rollers	1	7	80	0.38	Paving	125.13	125.13
Tractors/Loaders/Backhoes	1	8	97	0.37	Paving	168.83	168.83
Air Compressors	1	6	78	0.48	Architectual Coat.	132.09	132.09
					Total Fuel Used	17108.28	**21003.20 (Gallons)**

Construction Phase	Days of Operation
Site Preparation	2
Grading	4
Building Construction	200
Paving	10
Architectual Coating	10

WORKER TRIPS

Construction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)	Total Gallons
Site Prepration Phase	24.0	8	15	5.00	10
Grading	24.0	8	15	5.00	20
Building Construction Phase	24.0	27	15	16.88	3375
Paving Phase	24.0	13	15	8.13	81.25
Architectural Coating	24.0	5	15	3.13	31.25
			Total	38.13	**3517.5**

VENDOR TRIPS

Construction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)	Total Gallons
Site Preparation Phase	7.4	0	7	0.00	0.00
Grading	7.4	0	7	0.00	0.00
Building Construction Phase	7.4	10	7	9.46	1891.89
Paving Phase	7.4	0	7	0.00	0.00
			Total	9.46	**1891.89**

Construction Phase	Days of Operation
Site Preparation	2
Grading	4
Building Construction	200
Paving	10
Architectural Coating	10

Total Gasoline Consumption (gallons)	**5409.39**
Total Diesel Consumption (gallons)	**21003.20**

Sources:

[1] United States Environmental Protection Agency. 2018. Exhaust and Crankcase Emission Factors for Nonrod Compression-Ignition Engines in MOVES2014b. July 2018. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100UXEN.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2018. *National Transportation Statistics 2018.* Available at: https://www.bts.gov/sites/bts.dot.gov/files/docs/browse-statistical-products-and-data/national-transportation-statistics/223001/ntentire2018q4.pdf.

Operational Trips

Use	Annual Miles	MPG	Total Gallons (50%)
Con. Market with Gas Pumps	4173598.0	24	86950.0
Other Asphalt Surface	0.0	0	0.0
Parking Lot	0.0	0	0.0
		Total	86950.0

Use	Annual Miles	MPG	Total Gallons (50%)
Con. Market with Gas Pumps	4173598.0	7	298114.1
Other Asphalt Surface	0.0	0	0.0
Parking Lot	0.0	0	0.0
		Total	298114.1
		Grand Tota	**385064.1**

APPENDIX E
PRELIMINARY SOIL INVESTIGATION AND INFILTRATION TESTS REPORT
OCTOBER 30, 2019

SOIL
EXPLORATION
COMPANY, INC.

Soil Engineering, Environmental Engineering, Materials Testing, Geology

October 30, 2019

Project No. 19196-01

TO: Beyond Food Mart, Inc.
4300 Edison Ave.
Chino, CA 91710

ATTENTION: Michael Ramirez

SUBJECT: Preliminary Soil Investigation and Infiltration Tests Report, Proposed Gas Station with Drive Thru and Car Wash Tunnel, SWC E. 6th Street and Pennsylvania Avenue (APN 418-122-028), City of Beaumont, California

Introduction

In accordance with your authorization, Soil Exploration Co., Inc. has performed a preliminary soil investigation and infiltration tests for the subject site (see Figure 1, Site Location Map). The accompanying report presents a summary of our findings, conclusions, recommendations and limitations of our work for construction of the proposed gas station with drive thru, car wash tunnel and associated parking and driveway(s).

Scope of Work

- Review soils, geologic, seismic, groundwater data and maps in our files.
- Perform exploration of the site by means of three 8" diameter borings, 16.5 to 25 feet deep, at readily accessible locations.
- Field Engineer (California Registered RCE) for logging, sampling of select soils, observation of excavation resistance, record SPT blow counts and water seepage (if any).
- Perform basic laboratory testing on select soil samples, expected to include moisture, density, sand equivalent, expansion index and water soluble sulfates.
- Perform digitized search of known faults within a 50-mile radius of the site.
- Determine California Building Code (CBC) 2016 seismic parameters for the site.
- Consult with project architect/civil design engineer.
- Perform two shallow infiltration tests at locations suggested by you.
- Prepare a report of our findings, conclusions and recommendations for site preparation, including overexcavation/removal depth, allowable bearing value, foundation/slab-on-grade depth/thickness recommendations, excavation characteristics, lateral static/seismic earth pressures for retaining walls design, general grading and grading specifications, California Building Code (2016) seismic design coefficient, Cal/OSHA soil classification and infiltration rate in inches/hour.

Existing Site Condition

The rectangular shaped, relatively flat, vacant site is located on the southwest corner of E. 6th Street and Pennsylvania Avenue in the City of Beaumont, Riverside County, California. E. 6th Street is a paved road with curbs, gutters and sidewalks and Pennsylvania Avenue is a paved road with no curbs, gutters and sidewalks. A chain link fence borders the site on the south side. An Auto Zone business is located on adjacent property to the west and adjacent property to the south is vacant. Vegetation consists of dense weeds.

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soilexploration@yahoo.com • www.soilexp.com

The approximate locations of the above and other features are shown on Exploratory Boring and Infiltration Tests Location Map (Plate 1).

Proposed Development

We understand that a gas station with drive thru, car wash tunnel and related improvements are proposed at the site. We understand that the proposed structures will be wood frame and/or steel construction with concrete slabs supported on prepared subgrade. Based on the relatively flat topography of the site, modest cut or fill grading and no significant cut or fill slopes are proposed.

Field Work

Three exploratory borings were drilled on October 17, 2019, to a maximum depth of 25 feet below existing ground surface, utilizing a B-53 mobile drill rig equipped with 8-inch diameter hollow stem auger. Refer to Plate 1 for boring locations. Standard Penetration Tests (SPT) blow counts were recorded for the earth materials. Relatively undisturbed samples of the soils were also obtained by utilizing California Ring Sampler.

In general these borings revealed that the site area is underlain by alluvial soils consisting of silty sand (USCS "SM"). The earth materials are medium dense to very dense. Geologic Map of the Beaumont Quadrangle shows the site area is underlain with alluvial-fan deposits (see Figure 2). Detailed descriptions of the earth materials encountered are presented in the form of Geotechnical Boring Logs in Appendix B.

Laboratory Testing

Laboratory tests were performed for select soils samples. The tests consisted primarily of natural moisture contents, dry density and water soluble sulfates. . Laboratory test results are presented in Appendix C and with Geotechnical Boring Logs in Appendix B.

Groundwater/Liquefaction

Groundwater, seepage or wet soils were not encountered in our exploratory borings, drilled to a maximum depth of 25 feet, at the time this work was performed. Groundwater study is not within the scope of this work. However groundwater data from State well in the vicinity of the site is tabulated below (see Figure 1, Site Location Map, for location of well):

State Well No.	WSE* (ft)	Date Measured	Distance/Location Relative to Site	Estimated Depth of Water Below Site (ft)
03S01W12001S	2191.4	11/17/2011	E/1.2 miles	401
	2189.5	4/23/2019		390.5

* WSE = Water Surface Elevation

Liquefaction occurs when loose, fine grained (poorly graded), saturated cohesionless soils are subject to ground shaking during an earthquake of large magnitude. Liquefaction potential in general is relatively high when the ground water table is less than thirty feet below ground surface. Based on the Riverside County GIS map, the site is located in a zone of low liquefaction potential (see Figure 3). Considering depth to groundwater (over 300 feet below ground surface), the potential for liquefaction at the site is very low.

Seismicity/Faulting

The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone or County of Riverside fault zone.

A computer search of known Quaternary major faults within 50 miles of the site from USGS National Seismic Hazard Maps is presented in Appendix D. Please note that it is probable that not all-active or potentially active faults in the region have been identified. Furthermore, seismic potential of the smaller and less notable faults is not sufficiently developed for assignment of maximum magnitudes and associated levels of ground shaking that might occur at the site due to these faults.

Conclusions

- Any vegetable matter, existing structures, old foundations, seepage pits, leach lines, septic tanks, old fills, buried utilities/irrigation lines, etc. and deleterious materials associated with previous use of the site would require removal from the proposed building/grading areas.

- Overexcavation and recompaction of surficial soils should be anticipated to provide adequate and uniform support for the proposed building(s), pavement and settlement sensitive improvements. All earth materials encountered during our exploration can be excavated with normal grading equipment in good working condition.

- Based on observations and soil classification, the expansion potential of the sandy foundation soils at the site is expected to be very low (EI<20).

- The use of shallow spread footings and caissons appears feasible for the proposed building/canopy columns support.

- Site is located approximately 5.90 miles from the San Jacinto fault. The site is located in a region of generally high seismicity, as is all of Southern California. During its design life, the site is expected to experience moderate to strong ground motions from earthquakes on regional and/or nearby causative faults.

- There is a 2 percent probability in 50 years (2475 year return period) that peak ground acceleration at the site will exceed 0.546g (see Appendix D).

- Based on Riverside County GIS map, the site is in an area of low liquefaction potential (see Figure 3).

- Based on Riverside County GIS map, the southerly portion of the site is located in a flood zone (see Figure 3). Flooding potential of the site should be determined by the design civil engineer and considered in planning and construction.

- The potential for seismically induced dynamic settlement of the onsite sandy soils during a strong earthquake is low, however cannot be precluded. This would be partially mitigated by overexcavation and recompaction of the upper foundations soils.

- Groundwater and/or seepage were not encountered during our subsurface investigation. Our experience indicates that surface or near-surface groundwater conditions can develop in areas where groundwater conditions did not exist prior to site development, especially in areas where a substantial increase in surface water infiltration results from landscape irrigation. We have no way of predicting depth to the groundwater which may fluctuate with seasonal changes and from one year to the next due to precipitation, irrigation, land use, climatic conditions as well as other factors. Subdrains, horizontal drains or other devices may be recommended in future for graded areas that exhibit nuisance seepage conditions.

Recommendations

Site Preparation/Overexcavation

All grading and backfills should be performed in accordance with City of Beaumont Grading Ordinance and the attached General Earthwork and Grading Specifications (Appendix E), except as modified in the text of this report. The proposed grading area should be cleared of existing structures, vegetation and deleterious material which should be hauled off site.

New buildings/structures should be provided with a compacted fill mat that extends to at least 5 feet beyond the structure lines in plan (where practical) and to a depth of at least 3 feet below existing ground or proposed grade, whichever is deeper. The excavated bottoms should be cleaned of roots, soft spots, deleterious materials, old fills, etc. As a result, deeper excavations should not be precluded. After cleaning of the excavated bottom, the exposed surfaces should be further scarified to a depth of at least 6 inches, thoroughly watered and recompacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557-12 Test Method, prior to placement of fill. All fills should be compacted to at least 90 percent of the maximum dry density.

Compacted Fills/Imported Soils

Any soil to be placed as fill, whether presently onsite or import, should be approved by the soil engineer or his representative prior to its placement. All onsite soils to be used as fill should be cleansed of any roots or other deleterious materials. Cobbles larger than 3 inches in diameter should not be placed in the vicinity of foundations and for utility line backfills. All fills should be placed in 6 to 8 inch loose lifts, thoroughly watered, mixed and compacted to at least 90 percent relative compaction. This is relative to the maximum dry density determined by ASTM 1557-12 Test Method.

Any imported soils should be sandy (preferably (USCS "SM" or "SW" and very low in expansion potential, EI<20) and approved by the soil engineer. The soil engineer or his representative should observe the placement of fill and take sufficient tests to verify the moisture content and the uniformity and degree of compaction obtained.

Foundation Design/Footings

Following site preparation, the use of shallow spread footings is feasible. A maximum allowable bearing value of 2000 psf is recommended. This bearing pressure has been established based on the assumption that the footings will be embedded at least 18 inches below lowest adjacent firm grade and into the onsite compacted soil mat, and measure at least 15 inches in width. Isolated column footings should be embedded at least 24 inches below lowest adjacent firm grade. This bearing value may be increased by one third for temporary (wind or seismic) loads. Reinforcement of the footings should be determined by qualified structural engineer, however minimum reinforcement of two No. 5 bars at top and two at bottom of continuous footings is recommended.

Foundation Design/Canopy Caisson

Typical canopy caisson should be 3.5 to 4 feet in diameter and extend to a depth of at least 6 feet below ground surface. An allowable bearing value of 2000 psf and lateral bearing of 300 psf/ft (maximum 3000 pcf) may be used in design.

Concrete Slabs-On-Grade

Floor slabs-on-grade should be at least 4 inches thick and should be reinforced with at least No. 3 bars at 18-inches on-center both ways, properly centered in mid-thickness of slabs (structural recommendations govern). Thicker slabs (at least 8 inches thick and supported on 4-inch thick aggregate base) should be considered for canopy area and driveways by structural design engineer based on the use of facilities.

A modular of subgrade reaction (k) value of 250 psi/inch may be used in the design of rigid slabs. A moisture barrier comprised of 10-mil Visqueen protected with 2-inches of sand above and 2-inches of sand below the Visqueen should be provided for office areas and where moisture intrusion from slabs-on-grade is objectionable. The Visqueen member should be lapped and sealed around all utility conduits. We recommend that a slipsheet (or equivalent) be utilized if grouted tiles or other crack sensitive flooring (such as marble tiles) is planned directly on concrete slabs.

Concrete Joints

The joints spacing for concrete slabs should be determined by the project architect. Joints should be laid out to form approximately square panels (equal transverse and longitudinal joint spacing). Rectangular panels, with the long dimension no more than one-and-one-half times the short, may be used when square panels are not feasible. The depth of longitudinal and transverse joints should be one-fourth the depth of the slab thickness.

Joint layout should be adjusted so that the joints will line up with the corners of structures, small foundations and other built-in structures. Acute angles or small pieces of slab curves as a result of joints layout should not be permitted.

Concrete Slump/Curing

The use of mechanically compacted/dense concrete with slump not exceeding 4 inches is recommended. Fresh concrete should be cured by protecting it against loss of moisture, rapid temperature change, and mechanical injury for at least 3 days after placement. Moist curing, waterproof paper, white polyethylene sheeting, white liquid membrane compound, or a combination thereof may be used. After finishing operations have been completed, the entire surface of the newly placed concrete should be covered by whatever curing medium is applicable to local conditions and approved by the engineer. The edges of concrete slabs exposed by the removal of forms should be protected immediately to provide these surfaces with continuous curing treatment equal to the method selected for curing the slab surfaces. The contractor should have at hand and ready to install before actual placement begins the equipment needed for adequate curing of the concrete.

Special Considerations/Excess Soils From Foundation Excavations

Excess soils generated from foundation excavations should not be placed on slabs and driveways without proper moisture and compaction. Slab subgrade should be verified to contain 1.2 times the soil optimum moisture content to a depth of 6 inches prior to placement of slab building materials. Moisture content must be tested in the field by the soil engineer. The addition of fiber mesh in the concrete and careful control of water/cement ratios may lessen the potential for slab cracking.

In hot or windy weather (80°F or 12 mph), the contractor must take appropriate curing precautions after the placement of concrete. The use of mechanically compacted low slump concrete (not exceeding 4 inches at the time of placement) is recommended.

Lateral Earth Pressures

The following lateral earth pressures and soil parameters in conjunction with the above recommended bearing value (2000 psf), may be used for design of canopy caissons and retaining walls with free draining compacted backfills. If passive earth pressure and friction are combined to provide required resistance to lateral forces, the value of the passive pressure should be reduced to two-thirds the following recommendations:

Active Earth Pressure with level backfill (P_a)	35 pcf (EFP), drained, yielding
At Rest Pressure (P_0)	55 pcf (EFP), drained, non-yielding (part of building wall)
Passive Earth Pressure (P_p)	250 pcf (EFP), drained, maximum of 2500 psf
Horizontal Coefficient of Friction (μ)	0.30
Unit Soil Weight (γ_t)	120 pcf
Skin Friction Value (caissons)	300 psf/foot of bounding area of caisson

We recommend drainage for retaining walls to be provided in accordance with Plate 2 of this report. Maximum precautions should be taken when placing drainage materials and during backfilling. Retaining walls should be waterproofed in accordance with project architect recommendations. All wall backfills should be properly compacted to at least 90 percent relative compaction.

Seismic Considerations

The site is located approximately 5.90 miles from the San Jacinto fault. The site soils class is D. Moderate to strong ground shaking can be expected at the site and there is a 2 percent probability in 50 years (2475 year return period) that peak ground acceleration will exceed 0.546g. The site soil profile is Class D (stiff soils). The structural engineer should consider City/County local codes, California Building Code (CBC) 2016 seismic data presented in this report (Appendix D), the latest requirements of the Structural Engineers Association of Southern California and any other pertinent data in selecting design parameters.

Expansion Index and Soluble Sulfates

Based on observation and soil classification, the expansion potential of the onsite soils is anticipated to be very low (EI<20).

Results of tests also performed by Cal Land Engineering, Inc. of Brea, California on a select soil sample indicate negligible soluble sulfate exposure (less than 0.1 percent water soluble sulfates by weight) (see Appendix C). Concrete, mix, placement and curing for concrete should comply with ACI guidelines. Based on sulfate test results, there is no restriction on cement type. However we recommend concrete slump not exceeding 4 inches at the time of placement. Ferrous metal pipes should be protected in accordance with recommendations of your structural or corrosion engineer.

Surface Drainage/Groundwater

The surface of the site should be graded to provide positive drainage away from structures and foundations. Drainage should be directed to established swales and then to appropriate drainage structures to minimize the possibility of serious erosion. Surface drainage must be directed and maintained away from the foundations. Water, either natural or by irrigation, should not be permitted to pond or saturate the surface soils.

Pavement Design/Subgrade-Base Compaction

On the basis of laboratory classification, we are of the opinion that the tentative new pavement design may be based on an R-value on the order of 30 (or better) corresponding to near surface soils. Considering this and based on typical traffic indices, the recommended pavement sections are outlined as follows:

Location	TI	Recommended Tentative Pavement Thickness
Heavy Truck/Traffic	6.5	4" asphalt concrete over 8" Class II aggregate base
Concrete Pad Areas	---	8" PCC over 4" Class II aggregate base
Vehicle Drive Area	5.5	3" AC over 7" aggregate base
Parking Area	4.5	3" AC over 4" aggregate base

The upper at least 12 inches of pavement subgrade soils should be recompacted to at least 95 percent relative compaction per maximum dry density determined by ASTM D1557-12. The aggregate base should also be compacted to at least 95 percent relative compaction. All subgrade and base must be firm and unyielding without pumping condition prior to placement of asphalt concrete or PCC pavement. Reinforcement of the concrete pavement (with at least No. 3 bars at 18-inches on-center) and use of 4000 psi concrete should also be a consideration.

Cal/OSHA Classification/Trench Excavations/Backfills

In general Cal/OSHA classification of onsite soils appears to be Type B.

Temporary trench excavations deeper than 5 feet should be shored or sloped at 1:1 or flatter in compliance with Cal/OSHA requirements:

a.) The shoring should be designed by a qualified engineer experienced in the shoring design.

b.) The tops of any temporary unshored excavations should be barricaded to prevent vehicle and storage loads within a 1:1 line projected upward from the bottom of the excavation or a minimum of 5 feet, whichever is greater. If the temporary construction embankments, including shored excavations, are to be maintained during the rainy season, berms are suggested along the tops of the excavations where necessary to prevent runoff from entering the excavation and eroding the slope faces.

c.) The soils exposed in the excavations should be inspected during excavation by the soils engineer so that modifications can be made if variations in the soil conditions occur.

d.) All unshored excavations should be stabilized within 30 days of initial excavation.

Backfills in the utility trenches should be compacted to at least 90 percent relative compaction. Onsite earth materials will be suitable for backfills. Clean sandy materials with sand equivalent value of at least 30 must be utilized for the pipe bedding and shading zone. Placement of the trench backfill in lifts and compaction by mechanical effort should be anticipated.

Foundation Plan Review/Observations and Testing

The recommendations provided in this report are based on preliminary design information and subsurface conditions as interpreted from limited exploratory work. Soil Exploration Co., Inc. should review the foundation plans prior to construction. Our conclusions and recommendations should also be reviewed, verified during grading/construction and revised as necessary.

Soil Exploration Co., Inc. should observe and/or test at the following stages of construction:

- During all overexcavations and grading.
- Following footing excavation and prior to placement of footing materials.
- During wetting of slab subgrade and prior to placement of slab materials.
- During all trench and wall backfills.
- During subgrade and base compaction prior to paving.
- When any unusual conditions are encountered.

Final Compaction Report

A final report of compaction control should be prepared subsequent to the completion of grading. The report should include a summary of work performed, laboratory test results, and the results, locations and elevations of field density tests performed during grading.

Limitation of Investigation

Our investigation was performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable Geotechnical Engineers practicing in this or similar locations. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

The field and laboratory test data are believed representative of the project site; however, soil conditions can vary significantly. As in most projects, conditions revealed during grading may be at variance with preliminary findings. If this condition occurs, the possible variations must be evaluated by the Project Geotechnical Engineer and adjusted as required or alternate design recommended.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractor carry out such recommendations in the field.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations, and we cannot be responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he considers any of the recommended actions presented herein to be unsafe.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In additions, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge.

This report was prepared for the client based on client's needs, directions and requirements at the time. This report is not authorized for use by and is not to be relied upon by any party except the client with whom Soil Exploration Co., Inc. contracted for the work. Use of, or reliance on, this report by any other party is at that party's risk. Unauthorized use of or reliance on this report constitutes an agreement to defend and indemnify Soil Exploration Co., Inc. from and against any liability which may arise as a result of such use or reliance, regardless of any fault, negligence, or strict liability of Soil Exploration Co., Inc.

Closure

If you should have any questions or concerns regarding this report, please do not hesitate to call our office. We appreciate this opportunity to be of service.

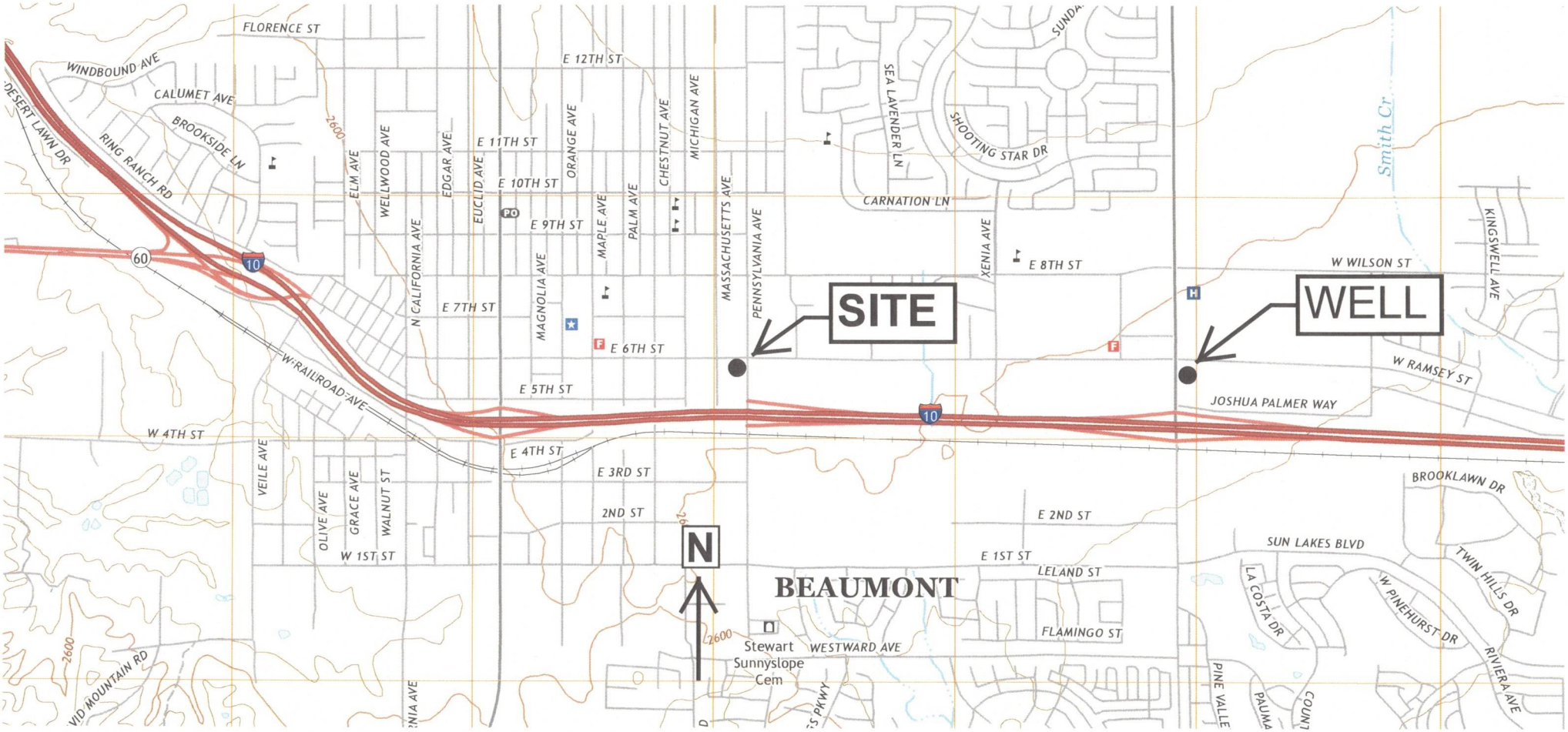
Very truly yours,
Soil Exploration Co., Inc.

Gene K. Luu, PE 53417
Project Engineer

Distribution: [1] Addressee

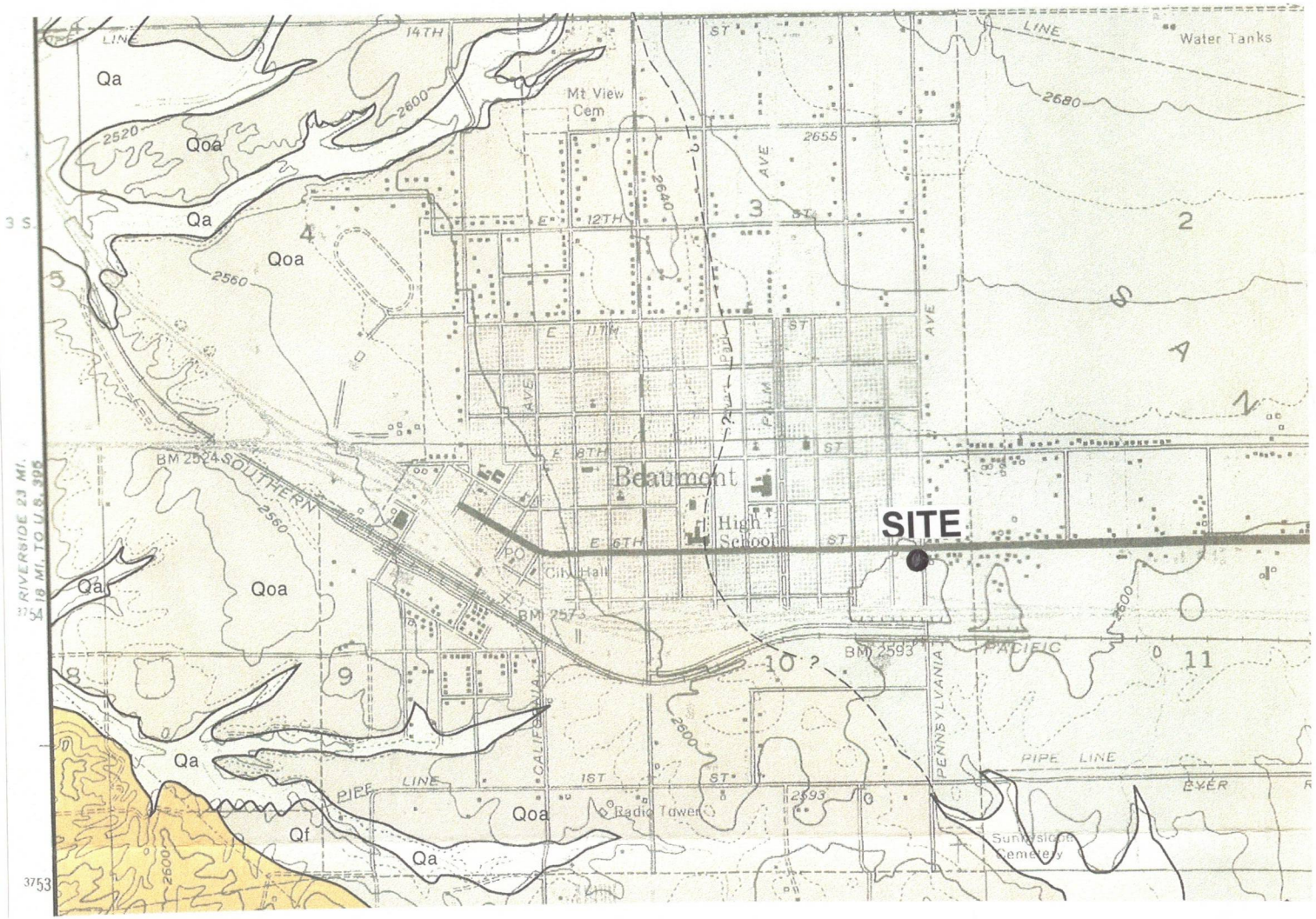
Attachments:

Figure 1	Site Location Map
Figure 2	Geologic Map
Figure 3	Riverside County GIS Map
Figure 4	U.S. Geological Survey Faults Map
Plate 1	Exploratory Boring and Infiltration Test Location Map
Plate 2	Retaining Wall Backfill and Subdrain Detail
Appendix A	References
Appendix B	Geotechnical Boring Logs
Appendix C	Laboratory Test Results
Appendix D	National Seismic Hazard Maps-Source Parameters and CBC (2016) Seismic Parameters
Appendix E	General Earthwork and Grading Specifications
Appendix F	Infiltration Test Procedure and Test Results



USGS, U.S. Topo, Beaumont Quadrangle, Riverside County, California, 2018.

Figure 1



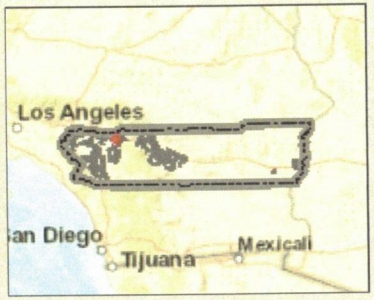
Base Map: Geologic Map of the Beaumont Quadrangle, Riverside County, California, by Thomas W. Dibblee, Jr., 2003.

LEGEND:

Qf: Alluvial-fan of San Gorgonio Pass; sand and gravel of plutonic and gneissic detritus derived from rising San Bernardino mountains to the north.

SWC E. 6th Street and Pennsylvania Avenue **City of Beaumont, California**	**Soil Exploration Co., Inc.** **Project No.: 19196-01** **Date: October 30, 2019** **Figure: 2**

Map My County Map



Legend

- Parcels
- Contours 20 ft interval (with 10
  - 20' CONTOUR
  - 100' INDEX CONTOUR
- Faults
  - OTHER AUTHORITY
  - ALQUIST-PRIOLO
  - RIVERSIDE COUNTY
- Fault Zones
  - OTHER FAULT ZONE
  - COUNTY FAULT ZONE
  - ELSINORE FAULT ZONE
  - SAN ANDREAS FAULT ZONE
  - SAN JACINTO FAULT ZONE
- Flood
- Liquefaction
  - Other Susceptibility
  - High
  - Low
  - Moderate
  - Very High
  - Very low
- Blueline Streams
- City Areas
- World Street Map

IMPORTANT Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

0 376 752 Feet

REPORT PRINTED ON... 10/10/2019 2:59:30 PM

© Riverside County GIS

Notes

APN 418122028

Figure 3

U.S. Geological Survey 2014 Faults

10/10/2019, 3:47:08 PM

1:577,791

0 4 8 16 mi

0 5 10 20 km

NSHM 2014 Fault Sources

Normal

Strike Slip

Thrust

Unassigned

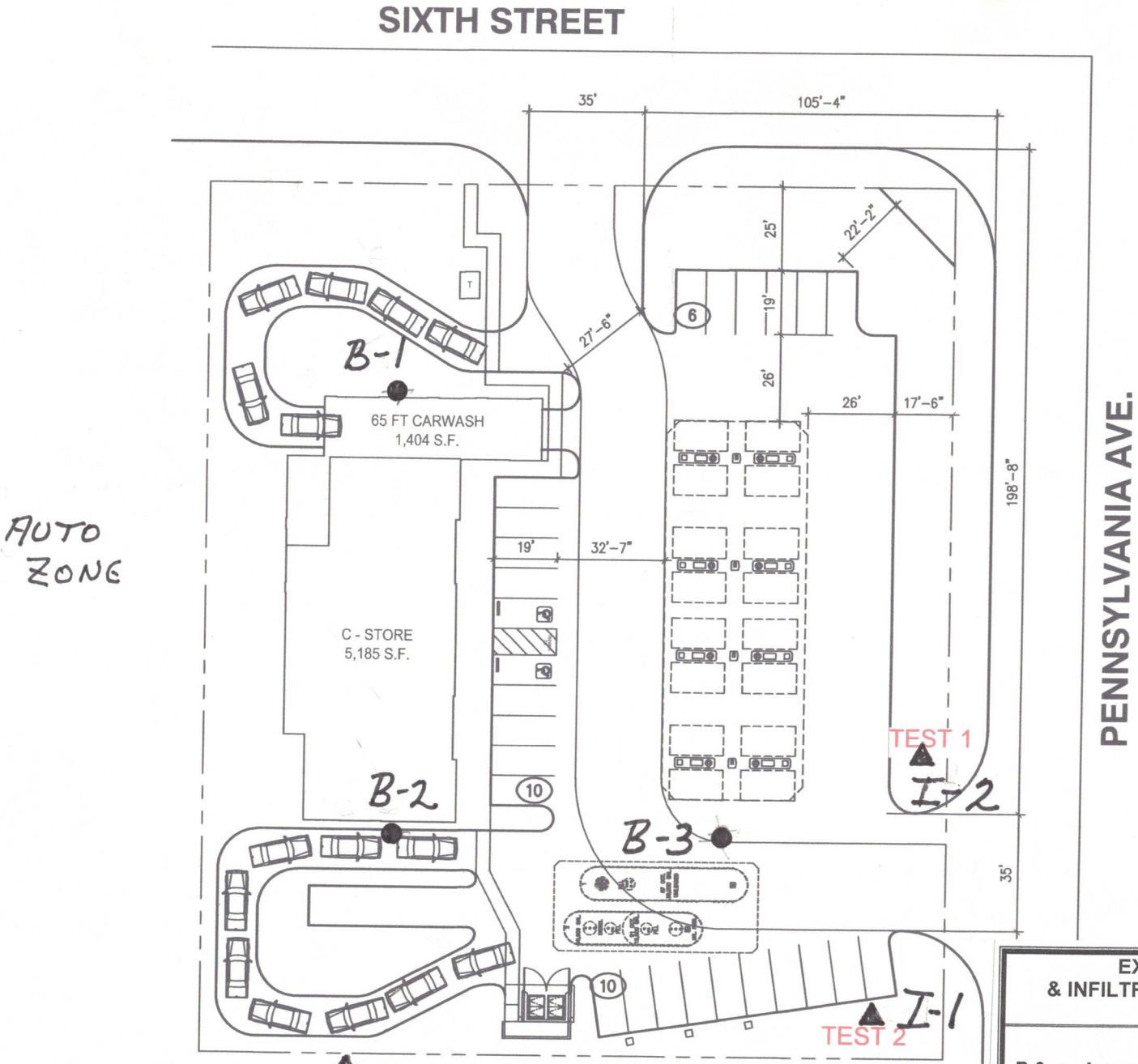
N

USGS, National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Figure 4

USGS

National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp. | USGS |



OPTION 1 VACANT

19-0705

EXPLORATORY BORING & INFILTRATION TEST LOCATION MAP
PLATE 1

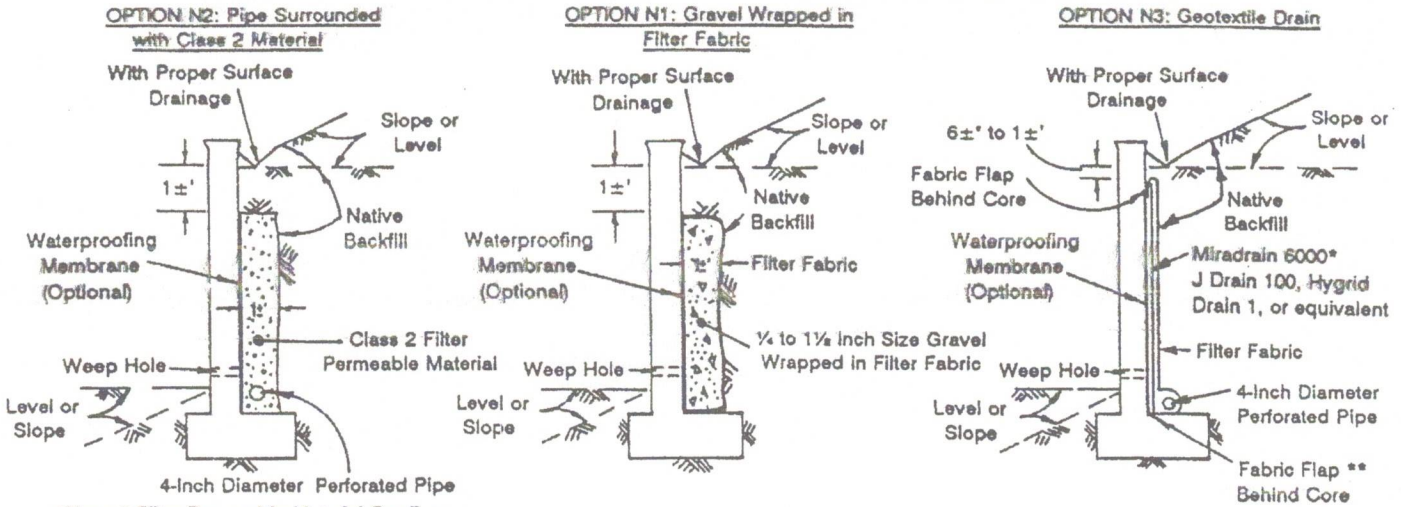
LEGEND

B-3 ● Approximate Location of Boring
I-2 ▲ Approximate Location of Infiltration Test

Soil Exploration Co., Inc.

Project No. 19196-01	October 30, 2019

SUBDRAIN OPTIONS FOR NATIVE MATERIAL BACKFILL



Class 2 Filter Permeable Material Grading Per Caltrans Specifications

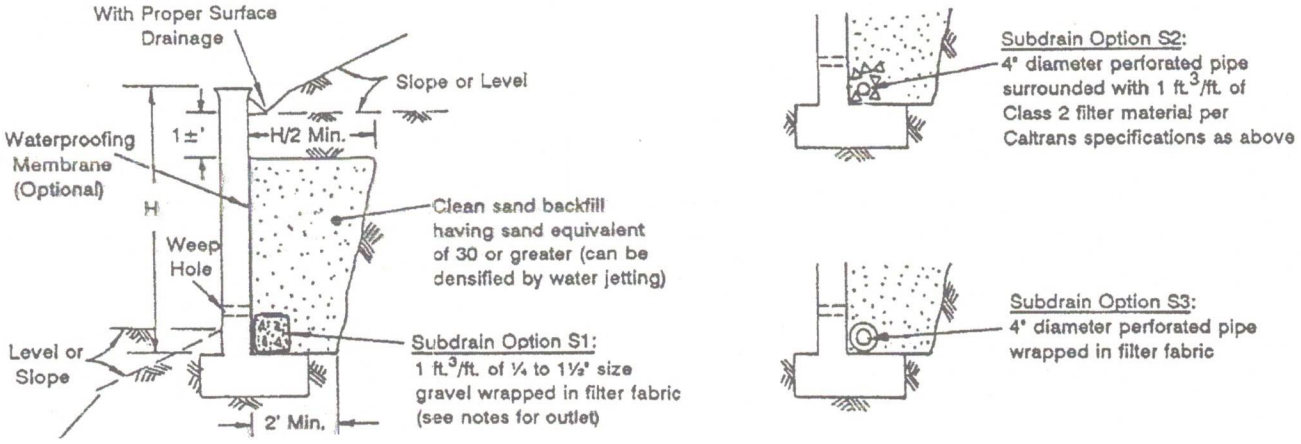
Sieve Size	Percent Passing
1"	100
3/4"	90-100
3/8"	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

Proper Outlet Should be Provided for Gravel Subdrain (See Notes)

*Miradrain 6000 or J Drain 100 for non-waterproofed walls; Miradrain 6200 or J Drain 200 for completed waterproofed walls

**Peel back the bottom fabric flap, place pipe next to core, wrap fabric around pipe and tuck behind core.

SUBDRAIN OPTIONS FOR CLEAN SAND BACKFILL



Notes:

- Pipe type should be ASTM D1527 Acrylonitrile Butediene Styrene (ABS) SDR35 or ASTM D1785 Polyvinyl Chloride plastic (PVC), Schedule 40, Armco A2000 PVC, or approved equivalent. Pipe should be installed with perforations down.
- Filter fabric should be Mirafi 140N, 140NS, Supac 4NP, Amoco 4545, Trevira 1114, or approved equivalent.
- All drains should have a gradient of 1 percent minimum.
- Outlet portion for gravel subdrain should have a 4"-diameter pipe with the perforated portion inserted into the gravel approximately 2' minimum and the nonperforated portion extending approximately 1' outside the gravel. Proper sealing should be provided at the pipe insertion enabling water to run from the gravel portion into rather than outside the pipe.
- Waterproofing membrane may be required for a specific retaining wall such as a stucco or basement wall.
- Weephole should be 2" minimum diameter and provided at 25' minimum in length of wall. If exposure is permitted, weephole should be located at 3±" above finished grade. If exposure is not permitted such as for a wall adjacent to a sidewalk/curb, a pipe under the sidewalk to discharge through the curb face or equivalent should be provided, or for a basement-type wall, a proper subdrain outlet system should be provided. Open vertical masonry joints (i.e., omit mortar from joints of first course above finished grade) at 32" maximum intervals may be substituted for weepholes. Screening such as with a filter fabric should be provided for weepholes/open joints to prevent earth materials from entering the holes/joints.

RETAINING WALL BACKFILL AND SUBDRAIN DETAIL

Soil Exploration Co. Inc.

Plate: 2

REFERENCES

- CDMG, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada, Dated February 1998.
- Riverside County GIS Map
- Geologic Map of the Beaumont Quadrangle, Riverside County, California, by Thomas W. Dibblee, Jr., 2003.
- U.S. Geological Survey Faults, 2014.

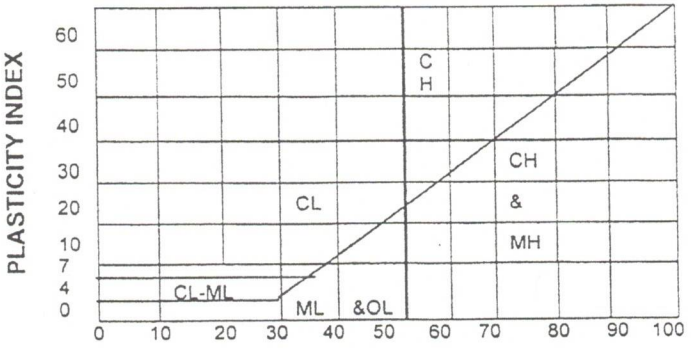
Riverside County Stormwater Quality Best Management Practice, Design Handbook for Low Impact Development, Riverside County, June 2014.

MAJOR DIVISIONS		SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS (More than ½ of soil < No. 200 sieve)	GRAVELS (More than ½ of coarse fraction > No. 4 sieve size)	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS (More than ½ of coarse fraction < No. 4 sieve size)	SW	Well-graded sands or gravely sands, little or no fines
		SP	Poorly graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-salt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (More than ½ of soil < No. 200 sieve)	SILTS & CLAYS LL < 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		OL	Organic silts and organic silty clays of low plasticity.
	SILTS & CLAYS LL > 50	MH	Inorganic silts, caceous or diatonaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of medium to high plasticity, organic silty clays, organic silts
		OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
	HIGHLY ORGANIC SOILS	Pt	Peat and other highly organic soils

CLASSIFICATION CHART
(UNIFIED SOIL CLASSIFICATION SYSTEM)

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDER	ABOVE 12"	ABOVE 305
COBBLES	3" to 12"	305 to 76.2
GRAVEL	3" to No. 4	762 to 4.76
COARSE	3" TO ¾"	76.2 to 19.1
FINE	¾"to No. 4	19.1 to 4.76
SAND	No. 4 to 200	4.76 to 0.074
COARSE	No. 4 to 10	4.76 to 2.00
MEDIUM	No. 10 to 40	2.00 to 0.420
FINE	No. 40 to 200	0.420 to 0.074
SILT & CLAY	BELOW No. 200	BELOW 0.074

GRAIN SIZE CHART



PLASTICITY CHART

Ring Sample	Bag Sample	NR No Recovery	Classification in accordance with ASTM D2487 Description and visual observation in accordance with ASTM D2488 All Sieve Sizes shown are US Standard SPT Refusal is defined as one of the following: 10 blows for no apparent displacement 50 blows for less than 6 inches advancement 100 blows for 6 to 18 inches advancement
SPT Sample	Seepage		

GEOTECHNICAL BORING LOGS

Drill Hole No. B-1

Date: October 17, 2019
Drilling Company: Larry Harklerode
Hole Diameter: 8" **Drive Weight:** 140 lbs. **Drop:** 30"

Project No. 19196-01
Type of Rig: B-53
Elevation: Existing Ground

DEPTH (feet)	TYPE OF TEST	SAMPLE TEST	BLOWS PER 6 INCH	DRY DENSITY (%)	MOISTURE (%)	SOIL CLASSIFICATION USCS	GEOTECHNICAL DESCRIPTION LOGGED BY: GL SAMPLED BY: GL
1						SM	**SILTY SAND:** Light brown, fine to medium grianed, dry, dense
2							
3		X	28/44/40	-	8.8		Dry, very dense
4							
5							
6		X	18/21/20	-	10.8		Slightly moist, dense
7							
8							
9							
10							
11		X	49/16/18	-	-		Yellowish/light brown, fine to medium grained, slightly moist, dense
12							
13							
14							
15							
16		X	6/12/18	-	-		Slightly moist, medium dense
17							
18							
19							
20							
21		X	20/20/20	-	-		Slightly moist, dense
22							
23							Slightly moist, dense
24							TOTAL DEPTH = 25 FEET NO GROUNDWATER
25		X	13/14/17	-	-		NO CAVIING BORING BACKFILLED

Soil Exploration Co., Inc.

GEOTECHNICAL BORING LOGS

Drill Hole No. B-2

Date: October 17, 2019
Drilling Company: Larry Harklerode
Hole Diameter: 8" **Drive Weight:** 140 lbs. **Drop:** 30"

Project No. 19196-01
Type of Rig: B-53
Elevation: Existing Ground

DEPTH (feet)	TYPE OF TEST	SAMPLE TEST	BLOWS PER 6 INCH	DRY DENSITY (%)	MOISTURE (%)	SOIL CLASSIFICATION USCS	GEOTECHNICAL DESCRIPTION LOGGED BY: GL SAMPLED BY: GL
1						SM	**SILTY SAND:** Light brown, fine to medium grained, slightly moist, dense
2							
3		■	23/25/30	89.3	8.1		Slightly moist, very dense
4							
5							
6		■	26/32/44	100.9	11.6		Slightly moist, very dense
7							
8							
9							
10							
11		X	9/6/6	-	-		Slightly moist, medium dense
12							
13							
14							
15							
16		X	12/12/18	-	-		Slightly moist, medium dense
17							
18							
19							
20							
21		X	23/24/27	-	-		Slightly moist, very dense
22							TOTAL DEPTH = 21.5 FEET NO GROUNDWATER NO CAVING BORING BACKFILLED
23							
24							
25							

Soil Exploration Co., Inc.

GEOTECHNICAL BORING LOGS

Drill Hole No. B-3

Date: October 17, 2019
Drilling Company: Larry Harklerode
Hole Diameter: 8" **Drive Weight:** 140 lbs. **Drop:** 30"

Project No. 19196-01
Type of Rig: B-53
Elevation: Existing Ground

DEPTH (feet)	TYPE OF TEST	SAMPLE TEST	BLOWS PER 6 INCH	DRY DENSITY (%)	MOISTURE (%)	SOIL CLASSIFICATION USCS	GEOTECHNICAL DESCRIPTION LOGGED BY: GL SAMPLED BY: GL
1						SM	**SILTY SAND:** Light brown, fine to medium grained, dry, dense
2							
3		X	26/28/30	-	6.2		Dry, very dense
4							
5							
6		X	:29/30/34	-	11.0		Dry, very dense
7							
8							
9							
10							
11		X	32/15/20	-	-		Yellowish/light brown, dense
12							
13							
14							
15							
16		X	15/20/26	-	-		Slightly moist, dense
17							TOTAL DEPTH = 16.5 FEET NO GROUNDWATER NO CAVING BORING BACKFILLED
18							
19							
20							
21							
22							
23							
24							
25							

Cal Land Engineering, Inc.
dba Quartech Consultants
Geotechnical, Environmental & Civil Engineering

October 23, 2019

Soil Exploration Company Inc.
7535 Jurupa Avenue, Unit C
Riverside, California 92504

Attn: Mr. Gene Luu

RE: LABORATORY TEST RESULTS/REPORT
Client: Beyond Food Mart, Inc.
Project: Sulfate
Project No.: 19196-01
QCI Job No.: 19-183-010e

Gentlemen:

We have completed the testing program conducted on sample for above project. The tests were performed in accordance with testing procedures as follows:

TEST	METHOD
Sulfate	CT- 417

Enclosed is Summary of Laboratory Test Results.

We appreciate the opportunity to provide testing services to Soil Exploration Company, Inc. Should you have any questions, please call the undersigned.

Sincerely yours,
Cal Land Engineering, Inc. (CLE)
dba Quartech Consultants (QCI)

Matthew Au
Project Engineer

Enclosure

Cal Land Engineering, Inc.
dba Quartech Consultants
Geotechnical, Environmental, and Civil Engineering

Soil Exploration Company Inc.
7535 Jurupa Avenue, Suite C
Riverside, California 92504

QCI Project No.: 19-183-010e
Date: October 23, 2019
Summarized by: MA

Client: Beyond Foot Mart, Inc.
Project: Sulfate
Project No.: 19196-01

Sulfate Test Results

Sample ID	Sample Depth (ft)	Sulfate CT-417 % By Weight
B-1	0-5'	0.0020

576 East Lambert Road, Brea, California 92821; Tel: 714-671-1050; Fax: 714-671-1090

2008 National Seismic Hazard Maps - Source Parameters

New Search

Distance in Miles	Name	State	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)
5.90	San Jacinto;SBV+SJV	CA	n/a	90	V	strike slip	0	16
5.90	San Jacinto;SJV	CA	18	90	V	strike slip	0	16
6.48	San Jacinto;SBV+SJV+A+C	CA	n/a	90	V	strike slip	0	17
6.48	San Jacinto;SBV+SJV+A	CA	n/a	90	V	strike slip	0	16
6.48	San Jacinto;SJV+A+CC+B+SM	CA	n/a	90	V	strike slip	0.1	15
6.48	San Jacinto;SJV+A+CC+B	CA	n/a	90	V	strike slip	0.1	15
6.48	San Jacinto;SJV+A+CC	CA	n/a	90	V	strike slip	0	16
6.48	San Jacinto;SJV+A+C	CA	n/a	90	V	strike slip	0	17
6.48	San Jacinto;SJV+A	CA	n/a	90	V	strike slip	0	17
6.48	San Jacinto;SBV+SJV+A+CC+B+SM	CA	n/a	90	V	strike slip	0.1	15
6.48	San Jacinto;SBV+SJV+A+CC+B	CA	n/a	90	V	strike slip	0.1	15
6.48	San Jacinto;SBV+SJV+A+CC	CA	n/a	90	V	strike slip	0	16
7.73	S. San Andreas;NSB+SSB+BG	CA	n/a	75		strike slip	0	14
7.73	S. San Andreas;NSB+SSB	CA	n/a	90	V	strike slip	0	13
7.73	S. San Andreas;NM+SM+NSB+SSB+BG+CO	CA	n/a	84		strike slip	0.1	13
7.73	S. San Andreas;NM+SM+NSB+SSB+BG	CA	n/a	83		strike slip	0	14
7.73	S. San Andreas;NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	13

7.73	S. San Andreas;BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14
7.73	S. San Andreas;BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	85		strike slip	0.1	13
7.73	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0	14
7.73	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14
7.73	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13
7.73	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	85		strike slip	0	14
7.73	S. San Andreas;CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14
7.73	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13
7.73	S. San Andreas;BB+NM+SM+NSB+SSB+BG	CA	n/a	84		strike slip	0	14
7.73	S. San Andreas;SSB+BG	CA	n/a	71		strike slip	0	13
7.73	S. San Andreas;NSB+SSB+BG+CO	CA	n/a	79		strike slip	0.2	12
7.73	S. San Andreas;SSB+BG+CO	CA	n/a	77		strike slip	0.2	12
7.73	S. San Andreas;SSB	CA	16	90	V	strike slip	0	13
7.73	S. San Andreas;SM+NSB+SSB+BG+CO	CA	n/a	83		strike slip	0.1	13
7.73	S. San Andreas;SM+NSB+SSB+BG	CA	n/a	81		strike slip	0	13
7.73	S. San Andreas;SM+NSB+SSB	CA	n/a	90	V	strike slip	0	13
7.73	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13
7.73	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0.1	13
7.73	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0.1	13
7.74	San Jacinto;A+C	CA	n/a	90	V	strike slip	0	17
7.74	San Jacinto;A	CA	9	90	V	strike slip	0	17

7.74	San Jacinto;A+CC	CA	n/a	90	V	strike slip	0	16
7.74	San Jacinto;A+CC+B	CA	n/a	90	V	strike slip	0.1	15
7.74	San Jacinto;A+CC+B+SM	CA	n/a	90	V	strike slip	0.1	15
9.59	S. San Andreas;BG+CO	CA	n/a	72		strike slip	0.3	12
9.59	S. San Andreas;BG	CA	n/a	58		strike slip	0	13
16.54	Pinto Mtn	CA	2.5	90	V	strike slip	0	16
16.72	San Jacinto;SBV	CA	6	90	V	strike slip	0	16
21.18	S. San Andreas;CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14
21.18	S. San Andreas;SM+NSB	CA	n/a	90	V	strike slip	0	13
21.18	S. San Andreas;NSB	CA	22	90	V	strike slip	0	13
21.18	S. San Andreas;NM+SM+NSB	CA	n/a	90	V	strike slip	0	13
21.18	S. San Andreas;BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14
21.18	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0.1	13
21.18	S. San Andreas;CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14
27.39	Elsinore;W+GI	CA	n/a	81	NE	strike slip	0	14
27.39	Elsinore;GI	CA	5	90	V	strike slip	0	13
27.97	Cleghorn	CA	3	90	V	strike slip	0	16
28.34	Elsinore;GI+T+J	CA	n/a	86	NE	strike slip	0	17
28.34	Elsinore;W+GI+T	CA	n/a	84	NE	strike slip	0	14
28.34	Elsinore;W+GI+T+J	CA	n/a	84	NE	strike slip	0	16
28.34	Elsinore;W+GI+T+J+CM	CA	n/a	84	NE	strike slip	0	16

28.34	Elsinore;GI+T	CA	5	90	V	strike slip	0	14
28.34	Elsinore;GI+T+J+CM	CA	n/a	86	NE	strike slip	0	16
28.42	Elsinore;T+J	CA	n/a	86	NE	strike slip	0	17
28.42	Elsinore;T+J+CM	CA	n/a	85	NE	strike slip	0	16
28.42	Elsinore;T	CA	5	90	V	strike slip	0	14
28.62	Helendale-So Lockhart	CA	0.6	90	V	strike slip	0	13
29.68	North Frontal (East)	CA	0.5	41	S	thrust	0	16
30.10	North Frontal (West)	CA	1	49	S	reverse	0	16
32.33	Cucamonga	CA	5	45	N	thrust	0	8
32.98	Burnt Mtn	CA	0.6	67	W	strike slip	0	16
34.41	Lenwood-Lockhart-Old Woman Springs	CA	0.9	90	V	strike slip	0	13
35.23	Chino, alt 2	CA	1	65	SW	strike slip	0	14
35.34	Landers	CA	0.6	90	V	strike slip	0	15
35.39	Eureka Peak	CA	0.6	90	V	strike slip	0	15
36.55	Elsinore;W	CA	2.5	75	NE	strike slip	0	14
36.67	Chino, alt 1	CA	1	50	SW	strike slip	0	9
39.35	Johnson Valley (No)	CA	0.6	90	V	strike slip	0	16
39.95	San Jacinto;C	CA	14	90	V	strike slip	0	17
39.98	San Jacinto;CC+B+SM	CA	n/a	90	V	strike slip	0.2	14
39.98	San Jacinto;CC	CA	4	90	V	strike slip	0	16
39.98	San Jacinto;CC+B	CA	n/a	90	V	strike slip	0.2	14
40.60	Elsinore;J+CM	CA	3	84	NE	strike slip	0	17

40.60	Elsinore;J	CA	3	84	NE	strike slip	0	19
42.49	S. San Andreas;CO	CA	20	90	V	strike slip	0.6	11
42.78	S. San Andreas;SM	CA	29	90	V	strike slip	0	13
42.78	S. San Andreas;PK+CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0.1	13
42.78	S. San Andreas;NM+SM	CA	n/a	90	V	strike slip	0	14
42.78	S. San Andreas;CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14
42.78	S. San Andreas;BB+NM+SM	CA	n/a	90	V	strike slip	0	14
42.78	S. San Andreas;CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14
43.48	San Jose	CA	0.5	74	NW	strike slip	0	15
45.04	So Emerson-Copper Mtn	CA	0.6	90	V	strike slip	0	14
46.40	Sierra Madre Connected	CA	2	51		reverse	0	14
46.40	Sierra Madre	CA	2	53	N	reverse	0	14
46.75	San Joaquin Hills	CA	0.5	23	SW	thrust	2	13
49.20	Calico-Hidalgo	CA	1.8	90	V	strike slip	0	14

2016 CBC – SEISMIC PARAMETERS		
Site Coordinates	**Latitude**	**Longitude**
	33.9290	**-116.9666**
Mapped Spectral Response Acceleration	**S_s = 1.500**	**S_1 = 0.622**
Site Coefficients (Class "D")	**F_a = 1.00**	**F_v = 1.50**
Maximum Considered Earthquake (MCE) Spectral Response Acceleration	**S_{MS} = 1.500**	**S_{M1} = 0.932**
Design Spectral Response Acceleration Parameters	**S_{DS} = 1.000**	**S_{D1} = 0.622**
Seismic Design Category	**D**	
Peak Ground Acceleration (PGA)	**0.546g**	

References:

- Earthquake.usgs.gov/research/hazmaps/design
- 2016 California Building Code, California Code of Regulations, Title 24, Part 2, Volume 2 of 2, Section 1613, Earthquake Loads

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

1.0 GENERAL INTENT

These specifications present general procedures and requirements for grading and earthwork as shown on the approved grading plans, including preparation of areas to be filled, placement of fill, installations of subdrains, and excavations. The recommendations contained in the geotechnical report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereinafter in the case of conflict. Evaluations performed by the consultant during the course of grading may result in new recommendations which could supersede these specifications or the recommendations of the geotechnical report.

2.0 EARTHWORK OBSERVATIONS AND TESTING

Prior to the commencement of grading, a qualified geotechnical consultant (soils engineer and engineering geologist, and their representatives) shall be employed for the purpose of observing earthwork procedures and testing the fills for conformance with the recommendations of the geotechnical report and these specifications. It will be necessary that the consultant provide adequate testing and observations so that he may determine that the work was accomplished as specified. It shall be the responsibility of the contractor to assist the consultant and keep him apprised of work schedules and changes so that he may schedule his personnel accordingly.

It shall be the sole responsibility of the contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and approved grading plans. If, in the opinion of the consultant, unsatisfactory conditions, such as questionable soil, poor moisture conditions, inadequate compaction, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the consultant will be empowered to reject the work and recommend that construction be stopped until the unsatisfactory conditions are rectified.

Maximum dry density tests used to determine the degree of compaction will be performed in accordance with the American Society of Testing and Materials, test method ASTM D1557-12.

3.0 PREPARATION OF AREAS TO BE FILLED

3.1 Clearing and Grubbing

All brush, vegetation, and debris shall be removed or piled and otherwise disposed of.

3.2 Processing

The existing ground which is determined to be satisfactory for support of fill shall be scarified to a minimum depth of 6 inches. Existing ground which is not satisfactory shall be overexcavated as specified in the following section. Scarification shall continue until the soils are broken down and free of large clay lumps or clods and until the working surface is reasonably uniform and free of uneven features which would inhibit uniform compaction.

3.3 Overexcavation

Soft, dry, spongy, highly fractured or otherwise unsuitable ground, extending to such depth that surface processing cannot adequately improve the condition, shall be overexcavated down to firm ground, approved by the consultant.

3.4 Moisture Conditioning

Overexcavated and processed soils shall be watered, dried-back, blended, and/or mixed, as required to attain a uniform moisture content near optimum.

3.5 Recompaction

Overexcavation and processed soils which have been properly mixed and moisture-conditioned shall be recompacted to a minimum relative compaction of 90 percent.

3.6 *Benching*

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal : vertical), the ground shall be stepped or benched. The lowest bench shall be a minimum of 15 feet wide, shall be at least 2 feet deep, shall expose firm materials, and shall be approved by the consultant. Other benches shall be excavated in firm materials for a minimum width of 4 feet. Ground sloping flatter than 5:1 (horizontal : vertical) shall be benched or otherwise overexcavated when considered necessary by the consultant.

3.7 *Approval*

All areas to receive fill, including processed areas, removal areas and toe-of-fill benches shall be approved by the consultant prior to fill placement.

4.0 FILL MATERIAL

4.1 *General*

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

4.2 *Oversize*

Oversize materials defined as rock, or other irreducible material with maximum dimension greater than 12 inches, shall not be buried or placed in fills, unless the location, materials, and disposal methods are specifically approved by the consultant. Oversize disposal operations shall be such that nesting of oversize material does not occur, and such that the oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 feet vertically of finish grade or within the range of future utilities or underground construction, unless specifically approved by the consultant.

4.3 *Import*

If importing of fill material is required for grading, the import material shall meet the requirements of Section 4.1.

5.0 FILL PLACEMENT and COMPACTION

5.1 *Fill Lifts*

Approved fill material shall be placed in areas prepared to receive fill in near-horizontal layers not exceeding 6 inches in compacted thickness. The consultant may approve thicker lifts if testing indicates the grading procedures are such that adequate compaction is being achieved with lifts of greater thickness. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to attain uniformity of material and moisture in each layer.

5.2 *Fill Moisture*

Fill layers at a moisture content less than optimum shall be watered and mixed, and wet fill layers shall be aerated by scarification or shall be blended with drier material. Moisture conditioning and mixing of fill layers shall continue until the fill material is at a uniform moisture content at or near optimum.

5.3 *Compaction of Fill*

After each layer has been evenly spread, moisture-conditioned, and mixed, it shall be uniformly compacted to not less than 90 percent of maximum dry density. Compaction equipment shall be adequately sized and shall be either specifically designed for soil compaction or of proven reliability, to efficiently achieve the specified degree of compaction.

5.4 *Fill Slopes*

Compacting of slopes shall be accomplished, in addition to normal compacting procedures, by backrolling of slopes with sheepsfoot rollers at frequent increments of 2 to 3 feet in fill elevation gain, or by other methods producing satisfactory results. At the completion of grading, the relative compaction of the slope out to the slope face shall be at least 90 percent.

5.5 *Compaction Testing*

Field-tests to check the fill moisture and degree of compaction will be performed by the consultant. The location and frequency of tests shall be at the consultant's discretion. In general, the tests will be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of embankment.

6.0 SUBDRAIN INSTALLATION

Subdrain systems, if required, shall be installed in approved ground to conform to the approximate alignment and details shown on the plans or herein. The subdrain location or materials shall not be changed or modified without the approval of the consultant. The consultant, however, may recommend and upon approval, direct changes in subdrain line, grade or material. All subdrains should be surveyed for line and grade after installation and sufficient time shall be allowed for the surveys, prior to commencement of filling over the subdrain.

7.0 EXCAVATION

Excavations and cut slopes will be examined during grading. If directed by the consultant, further excavation or overexcavation and refilling of cut areas shall be performed, and/or remedial grading of cut slopes shall be performed. Where fill-over-cut slopes are to be graded, unless otherwise approved, the cut portion of the slope shall be made and approved by the consultant prior to placement of materials for construction of the fill portion of the slope.

8.0 TRENCH BACKFILLS

Trench excavations for utility pipes shall be backfilled under engineering supervision.

After the utility pipe has been laid, the space under and around the pipe shall be backfilled with clean sand or approved granular soil to a depth of at least one foot over the top of the pipe. The sand backfill shall be uniformly jetted into place before the controlled backfill is placed over the sand.

The onsite materials, or other soils approved by the soil engineer, shall be watered and mixed as necessary prior to placement in lifts over the sand backfill.

The controlled backfill shall be compacted to at least 90 percent of the maximum dry density as determined by the ASTM D1557-12 test method.

Field density tests and inspection of the backfill procedures shall be made by the soil engineer during backfilling to see that proper moisture content and uniform compaction is being maintained. The contractor shall provide test holes and exploratory pits as required by the soil engineer to enable sampling and testing.

Infiltration Test (Percolation Test Procedure)

The tests were performed in accordance with Riverside County Stormwater Quality Best Management Practice Design Handbook for Low Impact Development, dated June 2014.

Two 8-inch diameter test holes (I-1 and I-2) were drilled at the suggested locations. The soil at the test locations was visually classified as silty sand. To mitigate any possible caving or sloughing of the test holes, a 6-inch diameter perforated pipe was placed in the hole. The bottom of the hole was covered with 2 inches of gravel.

The testing was conducted after presoaking. Two consecutive measurements showed that 6 inches of water seeped away in less than 25 minutes for I-1 and more than 25 minutes for I-2. The tests were therefore run an additional one hour with measurements taken at 10 minute intervals for I-1 and for an additional six hours with measurements taken at 30 minute intervals for I-2. Water level was adjusted to 20 inches above the bottom of the test hole after each measurement. The drop that occurred during the final reading was used for design rate purposes.

Infiltration Test/Tabulated Test Results

Test No.	Depth of Test (feet)	Earth Material	Infiltration Rate (in/hr)
I-1	9	Silty Sand (SM)	5.03
I-2	8	Silty Sand (SM)	0.88

We recommend that a suitable factor of safety should be applied to the rate in design of the system.

INFILTRATION TEST DATA
(Boring Percolation Test Procedure)

Project: BEYOND FOOD MART INC Project No.: 19196-09
Test Hole No.: TH1 Date Excavated: 10/17/19
Depth of Test Hole: 9 FEET Soil Classification: SM
Diameter: 8" Presoak: YES
Tested By: EL Date: 10-21-19

SANDY SOIL CRITERIA TEST

Trial No.	Time	Time Interval (min)	Initial Water Level (inches)	Final Water Level (inches)	Δ in Water Level (inches)	Greater Than or Equal to 6" (Y/N)
1	1:05 20	25	88	97.75	9.75	Y
	1:30 20					
2	1:33 09	25	"	97.75	"	Y
	1:58 09					

Use Normal Sandy (Circle One) Soil Criteria

Trial No.	Start Time	Stop Time	Δt Time Interval (min.)	Do Initial Depth to Water(in.)	Df Final Depth to Water(in.)	ΔD Change in Water Level (in.)	Infiltration Rate (in./hr.)
1	2:0005	2:1005	10	88	97.5	9.5	
2	2:1242	2:2242	10	"	97.125	9.125	
3	2:2301	2:3301	10	"	96.5	8.5	
4	2:3647	2:4647	10	"	96.125	8.125	
5	2:4840	2:5840	10	"	95.625	7.625	
6	3:0100	3:1100	10	"	"	"	
7	3:1145	3:2145	10	"	"	"	5.03
8							
9							
10							
11							
12							

COMMENTS:

Infiltration Rate $= \frac{4 \times 60 \times 7.625}{10(4 + (20 + (20 - 7.625)))} = 5.03$ in/hr

INFILTRATION TEST DATA
(Boring Percolation Test Procedure)

Project: BEYOND FOOD MART, INC Project No.: 19196-01
Test Hole No.: I2 Date Excavated: 10/17/19
Depth of Test Hole: 8 FEET Soil Classification: SM
Diameter: 8" Presoak: YES
Tested By: [illegible] Date: 10-21-19

SANDY SOIL CRITERIA TEST

Trial No.	Time	Time Interval (min)	Initial Water Level (inches)	Final Water Level (inches)	Δ in Water Level (inches)	Greater Than or Equal to 6" (Y/N)
1	10:09 06 10:34 06	25	76	21 23/8	3.625	N
2	10:35 01 11:00 01	25	76	21 23/8	"	N

Use Normal Sandy (Circle One) Soil Criteria

Trial No.	Start Time	Stop Time	Δt Time Interval (min.)	Do Initial Depth to Water(in.)	Df Final Depth to Water(in.)	ΔD Change in Water Level (in.)	Infiltration Rate (in./hr.)
1	11:04 08	11:34 08	30	76	80.375	4.375	
2	11:34 52	12:04 52	30	"	"	"	
3	12:10 15	12:40 15	30	"	"	"	
4	12:43 12	1:13 12	30	"	"	"	
5	1:14:23	1:44:23	"	"	"	"	
6	1:50:34	2:20:34	"	"	"	"	
7	2:23:45	2:53:45	"	"	"	"	
8	2:55:56	3:25:56	"	"	"	"	
9	3:28:08	3:58:08	"	"	"	"	
10	4:00:20	4:30:20	"	"	"	"	
11	4:32:32	5:02:32	"	"	"	"	
12	5:04:44	5:34:44	"	"	"	"	0.88

COMMENTS:

Infiltration Rate = $\frac{4 \times 60 \times 4.375}{30(4+(20+(20-4.375)))} = 0.88$ in/hr.

APPENDIX F
PHASE I ENVIRONMENTAL SITE ASSESSMENT
MAY 8, 2020

PHASE I
ENVIRONMENTAL ASSESSMENT REPORT

MAY 8, 2020

APN 418-122-028
BEAUMONT, CA 92223

PREPARED FOR

1151 EAST 6TH STREET, LLC

PREPARED BY

ROBIN ENVIRONMENTAL MANAGEMENT (REM)
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PROJECT NO. 220820

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1. INTRODUCTION

1.1 Objective

This report summarizes the results of a Phase I Environmental Site Assessment of the subject property performed by Robin Environmental Management (REM) in May 2020. The purpose of this Environmental Site Assessment is to evaluate the potential for environmental concerns or liabilities due to past and/or current land use practices at the subject site or from nearby properties. This assessment included in this report is solely targeted for CERCLA (Superfund) liability and the "innocent landowner defense", to permit user to satisfy one of the requirements to qualify for the innocent landowner defense to CERCLA liability, by conducting all appropriate inquiries to identify recognized environmental conditions (RECs).

1.2 Scope of Work

- Visual investigation of the property to obtain information regarding obvious visual signs of adverse environmental conditions, contamination, hazardous material usage, storage and handling on and in the adjoining sites (only up to one parcel next to the subject property) of the subject property

- Visual survey of the adjoining land uses (only up to one parcel next to the subject property) and determination of any current nearby operations which may potentially impact the subject site

- Government document search of records compiled by various government agencies for on site or nearby operations (past and present) to aid in the identification of any potential contamination sources

- Review of building permit records available at local agency and other pertinent documents to identify any potential past on-site operations which may have environmental implications.

2. PROPERTY DESCRIPTION

2.1 Geographical Description of Property

The subject property, APN 418-122-028, is a roughly rectangular-shaped lot located at the southwestern corner of (the E-W trending) 6th Street and (there N-S trending) Pennsylvania Avenue within a commercial usage zone in the city of Beaumont, California as shown on Figure 1-Site Photos, Figure 2-Site Location Map, and Figure 3-Recent Aerial Photograph Showing Site and Its Vicinity General Layout.

2.2 General Description of the Subject Property

The subject property, APN 418-122-028, is a roughly rectangular-shaped lot located at the southwestern corner of (the E-W trending) 6th Street and (there N-S trending) Pennsylvania Avenue in the city of Beaumont, California. The subject site is currently unpaved vacant lot generally covered by native vegetation. No pits, ponds, swamps, dry wells, or lagoons were observed on the subject property. No apparently significant surface staining was noticed on the entire unpaved outdoor areas of the site.

2.3 Present Tenants and Business Operation

At the time of site inspection on May 1, 2020, the site was unpaved vacant lot generally covered by native vegetation. The site is planned being developed into a Beyond Food Mart, 8 Fueling Islands Gas Station and Carwash Tunnel (see Figure 4 for a site development plan). Based on the site development plan, access to the site will be provided by a 35-foot driveway at Pennsylvania Avenue and a 35-foot driveway at Sixth Street that will be shared with the western adjacent Auto Zone store. The shared driveway would require the relocation of approximately 5 parking spaces on the AutoZone property.

2.4 Past Tenants and Business Operation

Methods of researching historic use of ownership of the subject property employed by REM are as follows:

- Historic Aerial Photo records
- Historic City Directory records

- City Building Department records

2.4.1 Historic Aerial Photo Records

Historic aerial photo records for the site area included in Appendix B showed that, in 1966, 1978, 1996, 2005, 2009, and 2016, the entire site was generally vacant and undeveloped lot.

2.4.2 Historic City Directory Records

REM Staff reviewed historic city directory records available at the Sherman Library, Newport Beach, CA. There were only city directory listings for the 1151 6th Street address, address for the property immediately to the west of the site, noticed.

2.4.3 City Building Department Records

Records available at the City of Beaumont Building Department indicated that the site has not been developed in the past.

2.4.4 Site Development/Occupancy History Summary

Based on historic site occupancy data listed above, the site has not been developed in the past.

2.5 Regional Physical Setting

The subject property's physical locations were researched employing a United States Geological Survey (USGS) 7.5 Minute Topographic Quadrangle (Quad) Map relevant to the subject property. The USGS 7.5 Minute Quad Map has an approximate scale of 1 inch to 2,000 feet, and shows physical features with environmental significance such as wetlands, water bodies, roadways, mines, and buildings. Please refer to Appendix A, Figure 2.

The physical and natural features illustrated on the Quad Map served as areas of visual emphasis when conducting the site inspection of the subject property. The USGS 7.5 Minute Quad Map was used as the only Standard Physical Setting Source, and is sufficient as a single reference. The surface elevation of the subject site is approximately 2,600 feet above Mean Sea Level (MSL) and exhibits a topographic down gradient generally towards south-southeast.

2.6 Hydrogeological Information

The subject site is located near the northeastern end of the generally NE-SW trending San Jacinto Groundwater Sub-Basin of the Santa Ana River Groundwater Basin. General hydrogeology information for the Santa Ana River Groundwater Basin can be found in the California Department of Water Resources Bulletin 15 (1955), "Santa Ana River Investigation; Appendix B: Geology of San Jacinto and Elsinore Basins". Based on the above reference, the San Jacinto Groundwater Basin consists of an alluvium-filled drainage system on a rather high-standing fault block, the Perris block. The alluvial fill in some places is more than several hundred feet thick.

The principal confined aquifer of the San Jacinto Groundwater Sub-Basin lie at depths greater than 100 feet. According to information obtained from the Riverside County Flood Control District, the depth to" groundwater underneath the subject site area is approximately 300 feet and exhibits a general flow direction towards south.

2.7 Historical and Current Hazardous Substance Usage

2.7.1 Record search sources

REM's field engineer contacted the following public agencies to find any records of former operation of underground storage tank (UST) of gasoline/product or any other hazardous substances on the subject site premise:

- City of Beaumont Building Department
- Regional Water Quality Control Board – Santa Ana Region

No records were found in reference to historical usage or handling of UST or any hazardous substances on the subject property.

2.7.2 List and quantities of the hazardous materials

During the site inspection, the use, storage, and generation of any quantity of hazardous materials was not observed. No regulatory agency data was found regarding historic or present use of the subject property in regards to hazardous materials previously or presently used, stored, treated, disposed or generated at the subject property.

2.7.3 Permits, licenses, and registrations

All present and past records of permits, licenses, registrations, certificates of environmentally related operations were searched. No equipment requiring environmentally related licensing was observed. Thus, no environmentally related permits or registrations were necessary for the operation of subject business.

2.7.4 Violation or non-compliance notice

No currently pending violation or notice of non-compliance was issued with the present environmental regulations, according to the findings of our environmental assessment on the subject property.

2.7.5 Regulatory database record research.

The subject property was not listed on the following environmental regulatory database record research (NETR records search): NPL, RCRA-TSD, CERCLIS, NFRAP, RCRA-G, ERNS, CORRACTS, CORTESE, CALSITES, LUST, UST, and SWF.

2.7.6 Environmental lien records

Under current environment regulation, government agency may place an environmental lien on the property with known contamination and no cleanup/mitigation activities apparently intended being conducted by the site owner upon the agency issued the cleanup enforcement order. The conducted government records search shows that there are no environmental liens placed by the federal environmental agency under CERCLA regulations for the subject site. REM staff searched the California State Department of Toxic Substances website EnviroStor data search and found no environmental liens were placed by the State environmental agency for the subject site. Records available at the City of Beaumont also show that there are no environmental liens placed by the local environmental agency for the subject site.

3. PROPERTY RECONNAISSANCE

REM's environmental assessor/geologist performed the field survey of the subject site and adjacent properties on May 1, 2020. A site location map and a recent aerial photograph showing site and its vicinity general layout are included as Figures 2 and 3, respectively.

3.1 Air Quality - Indoor and Visible Emissions

No unusual smells, obnoxious odors, or visual emissions were observed during the inspection of the subject property. Neither air emission stacks nor paint booth were present, thus no pertinent permits were searched for the previous records of violation history.

3.2 Asbestos-Containing Material (ACM)

Since the subject lot is currently with no improvement buildings, asbestos-containing building materials are not of environmental concern.

3.3 Lead-Based Paint (LBP)

Since the subject lot is currently vacant with no improvement buildings, lead-based paint is also not a potentially environmental concern.

3.4 Polychlorinated Biphenyl (PCB's)

Prior to 1978, PCBs were commonly used in dielectric fluids in transformers, capacitors, and light ballasts due to their desirable thermal characteristics, and hydraulic fluid compactor. Due to their demonstrated toxicity and persistence in the environment, PCB manufacturing in the United States was discontinued.

Pole- or pad- mounted transformers were found in the vicinity of the subject building, appearing in good condition without any sign of leakage. No PCB-containing hydraulic fluid trash compactor was noticed present on the subject site premise.

3.5 Underground Storage Tank (UST)

The visual inspection of the subject site revealed no evidence of surface or above ground features (e.g., fill pipe, vent pipes, fill connections, concrete pads, saw cuts, sumps, spill

containment device, leak detection device, etc.) normally associated with underground storage tanks (UST's).

3.6 Aboveground Storage Tank

REM's field officer performed the visual inspection of the subject site to find evidence of surface or above ground features (e.g., fill pipe, vent pipes, fill connections, concrete pads, saw cuts, concrete pad, drains in vicinity, etc.) normally associated with aboveground storage tanks (AST's). Visual observation also includes the inspection to identify any surface markings indicating the existence of aboveground product pipelines. No evidence on the presence of any on-site aboveground storage tank was identified.

3.7 Fuel Islands

The visual inspection of the subject site revealed no evidence of fuel islands or dispensers either in operation or abandoned.

3.8 Hydraulic Hoist Unit

The visual inspection of the subject site revealed no presence of underground hydraulic hoist units within the subject site premise.

3.9 Hazardous Materials / Petroleum Products Storage & Handling

No containers storing automotive or industrial batteries, pesticides, or chemicals seemingly exhibiting toxic hazards at the time of site inspection. No major spills, leakage, or staining were observed throughout the site

3.10 Other Containers

No other containers indicating any sign of environmental concern were observed during the site inspection.

3.11 Hazardous Waste Treatment, Storage, Disposal (TSD)

No storage, treatment, or disposal of hazardous waste was found during the site investigation. No severely improper waste stream processing or disposal practices were observed on the subject property.

3.12 Distress Vegetation

Planters and vegetation in the vicinity of the subject site were found well maintained on bare soil or within separate planters in relatively good appearance with no sign of chemical stress or unnatural appearance.

3.13 Stockpiled Soils and Construction Debris

REM's site inspection did not reveal any evidence of stockpiled soils on the ground of subject property.

3.14 Wastewater Treatment Unit / Clarifier

No underground industrial wastewater treatment facility, i.e., clarifier was observed on the subject property during the site visit.

Storm water drainage system in the close proximity of the subject area did not identify any abnormal accumulation of petroleum or chemical run-off or foreign materials. No unusual blockage of the storm-water control system was observed during the site visual investigation. REM recommends no investigation on described storm-water systems at the subject property.

3.15 Solid Waste Disposal

No improper activities of treatment or disposal of hazardous, medical, or toxic wastes are performed on the subject site.

3.16 Wells

REM's site walk-through did not discover any irrigation wells, injection wells, abandoned wells, groundwater-monitoring wells, dry wells, septic wells oil wells, gas wells, domestic water wells, other monitoring wells on the subject premises.

3.17 Underground Pipelines

REM's site inspection did not reveal any evidence of underground pipelines beneath the ground of subject property, other than public utility lines such as sewer, power, and electric

lines, for which public “dig-alert” service would easily identify upon 48-hour telephone notice in advance.

3.18 Boilers & HVAC Systems

The subject lot is current with no improvement buildings and there are no water heater and HVAC systems present on the site premise.

3.19 Visual Indication of Spills, Leakage, Staining

REM’s site inspection did not reveal any evidence of on-site or off-site spills, leakages, or staining significant enough to pose immediate environmental concern onto the subject property. No significantly stained catch basins, drip pads, or sumps were observed. There were no major spills around surface drains, pipes, gutters, spouts, or tubes, if any, at the time of site investigation.

3.20 Soil Staining or Surface Staining on Unpaved/Natural Lands

No staining or surface staining on the bare soil or unpaved lands were identified during the site investigation.

3.21 Pits, Ponds, Lagoons

No visible evidence of wetlands such as pits, ponds, lagoons, or any other water bodies, except water accumulating at the bottom of excavation along the west side of the site, was observed within the subject property’s boundary lines.

3.22 Herbicides/Pesticides

No evidence of herbicide or pesticide use on the subject property was observed during the inspection.

3.23 Radon

Radon sources can be found from earth and rock beneath building structures, well water, and building materials themselves. Though there is no immediate health effect, it is believed to account for approximately 10% of lung cancer deaths in the United States. Estimated national average is 1.5 picocuries per liter of air, however, levels as high as 200 picocuries

per liter in some commercial buildings can be found. USEPA and California Department of Health Services' Radon Survey Interim Results report shows different U.S. regions according to general geological and climate information, where Region 9 includes Imperial, Los Angeles, Orange, Riverside, San Bernardino, Ventura, and San Diego Counties. According to the California EPA, Los Angeles and Riverside County is classified as a "Zone 2" county having a predicted average screening level between 2-4 picocuries per liter of air. Orange and San Diego County is under Zone 3, having the level less than 2 picocuries/L, and Ventura County as Zone 1 has the level greater than 4 picocuries/L.

If a property region reportedly has radon concentration below 4 picocuries per liter of air in 99.5% of homes within the region, then, it is not likely impacted by the presence of radon gas, considering EPA action limit of 4 picocuries per liter of air volume. REM is not contracted to perform the testing of radon level on the subject property, thus the delineation of radon level is beyond the scope of the service covered in this report.

4. NEIGHBORING PROPERTIES

4.1 Adjacent/Adjoining Businesses

For the scope of this assessment, properties are defined and categorized based upon their physical proximity to the subject property. An adjoining property is any real estate property whose border is contiguous or partially contiguous with the subject properties, or that would be if the properties were not separated by a roadway, street, public thoroughfare, or stream.

Adjoining properties of the subject site are as follows:

North: Immediately by 6th Street, and then by, from west to east, residence, Classy K-9 Salon & Dog Wash (1152 E 6th Street), and small auto repair/tire shop complex with 1198 E 6th Street address

East: Immediately by Pennsylvania Avenue, and then by two-unit (#A occupied by Beaumont Market and #B occupied by Laundromat) strip commercial center with 1221 E 6th Street address to the north and Beaumont Auto Spa (560 Pennsylvania Avenue) to the south

South: By vacant lot

West: By AutoZone auto parts store (1151 E 6th Street)

4.2 Historical Hazardous Substance Usage in Neighboring Properties

REM's staff contacted the following public agencies to find any records of former operation of Underground Storage Tank (UST) of gasoline/product or any other hazardous substances in the vicinity of the subject site premise:

- Regional Water Quality Control Board, Santa Ana Region (RWQCB-SA)
- California Department of Toxic Substances Control

No locations in the immediate adjacency of the subject site were found to pose any environmental threat to the subject property, based upon the data obtained via NETR governmental records database and the conducted agency records search.

5. GOVERNMENT RECORDS SEARCH AND POTENTIAL OFF-SITE CONTAMINATION SOURCES

5.1 Historical Background and Scope of Coverage

Since the early 1970s, environmental agencies have been tracking the compliance of many facilities with the various laws that have been promulgated to halt the pollution of air, land and water. More recently, records have been maintained documenting spills of hazardous materials and the locations of known waste sites or regulated waste handling facilities. The following sections summarizes REM's review of database search of available records at the local, state and federal level and highlights the approximate location of such sites with respect to the subject property.

The conducted government record search was performed to aid:

1) Identification of facilities, located within a one-mile radius of the subject property, which might pose a potential threat to the subsurface environment at the subject property; and

2) Identification of any environmental violation notices associated with activities conducted at the subject property itself. The following lists were reviewed for sites within one mile of the property:

5.2 Database Sources

A. Federal Sources

- United States Environmental Protection Agency (U.S. EPA), Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)
- U.S. EPA, National Priority List (NPL)
- Resource Conservation and Recovery Act (RCRA) Federal TSD Facilities
- Federal Emergency Response Notification System (ERNS)
- CERCLA Site Enforcement Tracking System
- RCRA Violators List (CORRACTS)
- U.S. EPA Federal Enforcement Docket
- Toxic Release Inventory System (TRIS)

- No Further Remedial Action Planned (NFRAP)

The CERCLIS is the EPA compilation of sites for which the EPA has evidence of, or is investigating, a release or threatened release, of hazardous substances which may be subject to review in accordance with the terms and conditions of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (Superfund Act). Sites to be included are identified primarily by the reporting requirements of hazardous substances including degreasing solvents, oily waste, acid solutions, alkaline solutions, and heavy metal solutions, Treatment, Storage and Disposal (TSD) facilities and releases larger than specific Reportable Quantities (RQ), established by EPA.

An NPL site is an uncontrolled or abandoned hazardous waste site identified for priority remedial action under Superfund Program. Such prioritized sites with significant risk to human health and the environment receive remedial funding under the Comprehensive Environmental Response Conservation and Liability Act (CERCLA). RCRA generator/TSD list is a compilation of hazardous waste generating facilities which have obtained an identification number from EPA.

ERNS database is a national computer database used to store information on unauthorized release of oil and hazardous substances. The program is a cooperative effort of the Environmental Protection Agency, the Department of Transportation Research and Special Program Administration's National Transportation System Center and the National Response Center. There are primarily five Federal statues that requires release reporting: CERCLA Section 103; the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304; the Clean Water Act of 1972 (CWA) Section 311(b)(3); and the Hazardous Material Transportation Act of 1974 (HMTA) Section 1808 (b).

RCRA Violators List (CORRACTS): The Resource Conservation and Recovery Act of 1976 provides for "Cradle to Grave" regulation of hazardous wastes. RCRA requires regulation of hazardous waste generators, transporters, and TSD sites. Evaluation to potential violations, ranging from manifest requirements to hazardous waste discharges, is typically conducted by the US EPA. This database is also known as Corrective Action Report (CORRACTS).

Toxic Release Inventory System (TRIS): TRIS compiles database for a property having had a release of chemical compound, whose listing reflects permitted air releases rather than a release to soil or groundwater.

B. California State Sources

- State of California Office of Planning and Research (CORTESE), the State of California equivalent of CERCLIS
- Leaking Underground Storage Tanks (LUST)
- Solid Waste Information System (SWIS)
- Annual Work Plan (previously known as Bond Expenditure Plan), the State of California equivalent of NPL
- California Historical Abandoned Site Survey Program (CALSITES)

CALSITES: The Historical Abandoned Site Survey (HASS) Program, formerly the California Abandoned Sites Program Information System – ASPIS, identified certain potential hazardous waste sites. The identification of these sites was generally not made via sampling and site characterization, but as a result of file searches and windshield surveys.

No Further Action sites are also on the CALSITE list which has been marked for no further action by the California Environmental Protection Agency, Department of Toxic Substance Control (DTSC) in accordance with California Health & Safety Code.

CORTESE: This database is a consolidation of information from various sources. It is maintained by the State Office of Planning and Research and lists potential and confirmed hazardous waste or substances sites.

LUST(s): The Leaking Underground Storage Tanks (LUST) Information System is maintained by the State Water Resource Board pursuant to California Health & Safety Code.

SWIS (Solid Waste Information System): As legislated under Solid Waste Management and Resource Recovery Act of 1972, the California Waste Management Board maintains list of certain facilities, i.e. Active solid waste disposal sites, Inactive or Closed solid waste disposal sites and Transfer facilities.

AW (Annual Work Plan previously known as Bond Expenditure Plan): The California Health & Safety code requires the California EPA to develop a site-specific expenditure plan as the basis for an appropriation of California Hazardous Substance Cleanup Bond Act of 1984 funds. The Agency is also required to update annually and report any significant adjustments to the Legislature on an ongoing basis. The plan identifies California hazardous waste sites targeted for cleanup by responsible parties, the California and the Federal Environmental Protection Agency over the next coming years.

C. Regional Sources

- LUST - Regional
- Toxic Releases (NT)
- California Regional Water Resources Control Board, Solid Waste Assessment Test (SWAT)
- Well Investigation Program

NT (Toxic Releases): The California Regional Water Quality Control Boards or local Department of Health & Safety Services keeps track of toxic releases to the environment. These lists are known as Unauthorized Releases, Spill, Leaks, Investigation and Cleanups, Non-Tank Releases, Toxic List or similar, depending on the local agency

SWAT (Solid Waste Assessment Test): This program requires that disposal sites with more than 50,000 cubic yards of waste provide sufficient information to the regional water quality control board to determine whether or not the site has discharged hazardous substances which will impact the environment. Site operators are required to file Solid Waste Assessment Test reports on a staggered basis. Operators submit water quality tests to the Regional Water Quality Control Board, describing surface and groundwater quality and supply; and the geology

within 1 mile of the site. Air quality tests are submitted to the local Air Quality Management District or Air Pollution Control District.

D. Other Sources

- RCRA-Generator
- RCRA-TSD Facilities
- SWLF (Solid Waste Landfill)

RCRA-G: The EPA regulates generators of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste generators are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form or a State equivalent form. The notification form provides basic identification information and specific waste activities.

RCRA-D: The EPA regulates the treatment, storage and disposal of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste TSD facilities are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form or a State equivalent form.

SWLF: The California Waste Information system database consist both open as well closed and inactive solid waste disposal facilities and transfer stations pursuant to the Solid Waste Management and Resource Recovery Act of 1972. Generally the California Integrated Waste Management Board learns of locations of disposal facilities through permit applications and from local enforcement agencies.

5.3 Case Study References

A. Case-Closure

If sites are listed on the California Leaking Underground Storage Tank (LUST) database with a "case closed (no further remedial actions required)" status, it shall be interpreted as follows. The identified contamination at such sites was mitigated to a degree that the governing agency believed that these sites do not pose apparent concern/threat to the subsurface environment of the neighboring area.

B. Lawrence Livermore National Laboratory Reports on LUFT's

According to Lawrence Livermore National Laboratory / University of California Reports on Leaking Underground Fuel Tanks (LUFT's), approximately ninety percent of dissolved petroleum products are found less than 280 feet in distance from the origination source, and most of these plumes are either stable or decreasing in distance. And seventy percent of the plume is in shallow groundwater less than 25 feet below the ground surface.

C. Groundwater Flow Gradient

Environmentally-concerned sites located not directly at the up-gradient from the subject site can be deleted from anticipated target sites, since contamination from identified sites is unlikely to migrate along the groundwater flow direction to affect the subsurface environment underneath the subject site (Section 2.6 – Hydrogeologic Setting).

5.4 Potential Source of Contamination

Sites identified on referenced agency listing within the one-mile radius from the subject property are tabulated in the Appendix C of this Report. As shown in Appendix C, there are no Leaking Underground Storage Tank (LUST)/Spills sites or other sites identified as exhibiting potential environmental concerns within the immediate vicinity (< 1/8 mile) of the referenced subject property.

5.5 UST, Disposal Sites, and Generators

As also summarized in Appendix C, there are four sites listed on federal EPA RCRA small quantities hazardous waste generators list and no sites listed on permitted Underground Storage Tank (UST) database compiled by the State Water Resources Control Board, located within 1/8-mile radius of the subject site. Upon reviewing the information regarding the said facilities obtained via computer search, the conclusion was drawn that the subsurface environment at the subject site is not likely to have been impacted by operations of the said facilities.

6. SUMMARY AND CONCLUSION

- The subject property, APN 418-122-028, is a roughly rectangular-shaped lot located at the southwestern corner of (the E-W trending) 6th Street and (there N-S trending) Pennsylvania Avenue in the city of Beaumont, California. The subject site is currently unpaved vacant lot generally covered by native vegetation. No pits, ponds, swamps, dry wells, or lagoons were observed on the subject property. No apparently significant surface staining was noticed on the entire unpaved outdoor areas of the site.

  At the time of site inspection on May 1, 2020, the site was unpaved vacant lot generally covered by native vegetation. The site is planned being developed into a Beyond Food Mart, 8 Fueling Islands Gas Station and Carwash Tunnel (see Figure 4 for a site development plan). Based on the site development plan, access to the site will be provided by a 35-foot driveway at Pennsylvania Avenue and a 35-foot driveway at Sixth Street that will be shared with the western adjacent Auto Zone store. The shared driveway would require the relocation of approximately 5 parking spaces on the AutoZone property.

- Based on historic site occupancy data listed/discussed in Section 2.4, the site has not been developed in the past.

- According to the conducted government records search (see Section 5.0), the subject property was not recognized being listed on the following environmental regulatory database record research (NETR database): NPL, RCRA-TSD, CERCLIS, NFRAP, RCRA-G, ERNS, CORRACTS, CORTESE, CALSITES, LUST, UST, and SWF.

- Based on the conducted government records search, there are no Leaking Underground Storage Tank (LUST)/Spills sites or other sites identified as exhibiting potential environmental concerns within the immediate vicinity (< 1/8 mile) of the referenced subject property.

- In conclusion, we have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E-1527-13 of APN 418-122-028, Beaumont, CA. This assessment has revealed no evidence of recognized environmental conditions in connection with the property. No Phase II (subsurface investigation) environmental assessment is recommended for the subject property.

7. LIMITATIONS AND CERTIFICATION STAMP

The opinion expressed herein is based on the information collected during our study, our present understanding of the site conditions and our professional judgment in light of such information at the time of preparation of this opinion. The report is a professional opinion work, and no warranty is either expressed, implied or made as to the conclusions, advice and recommendations offered in this report. Our investigation was performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable Engineers and Geologists practicing in this or similar localities.

The findings, conclusions and recommendations in this report are considered valid as of the present date. However, changes in the conditions of the property can occur with the passage of time, due to natural process or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standard may occur. REM is not responsible for conditions found at or beneath the subject property or adjacent properties. Accordingly, portions of this report may be invalidated wholly or partially by the changes beyond our control.

This report is prepared for the exclusive use of the client, and opinions/recommendations contained in this report apply only to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated.

Report Prepared by:
ROBIN ENVIRONMENTAL MANAGEMENT

8. QUALIFICATION STATEMENT FOR PERSONNEL CONDUCTING THE PHASE I ASSESSMENT

Since Robin Chang, the personnel conducting the Phase I Environmental assessment is a California State Registered Professional Geologist, Robin Chang declares that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Sec. 312.10 of 40 CFR. I have the specific qualifications based on education, training, experience, and license to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

ROBIN ENVIRONMENTAL MANAGEMENT

APPENDICES

APPENDIX A

FIGURES & PHOTOS

FIGURE 1

SITE PHOTOS

Photo 1
Viewing the site from near the northeastern corner of the site (facing southwest)

Photo 2
Viewing the site from near the southwestern corner of the site (facing northeast)

Photo 3

Pad-mounted transformer and trash bin enclosure for AutoZone, the site's western adjacent neighbor, to the west of the southwestern corner of the site (facing south)

Photo 4

From left to right (from west to east), residence, Classy K-9 Salon & Dog Wash (1152 E 6th Street), and small auto repair/tire shop complex with 1198 E 6th Street address, across 6th Street, to the north of the site (facing northeast)

Photo 5

Two-unit (#A occupied by Beaumont Market and #B occupied by Laundromat) strip commercial center with 1221 E 6th Street address in the middle and on the left (to the north); and Beaumont Auto Spa (560 Pennsylvania Avenue) on the right (to the south), across Pennsylvania Avenue, to the east of the site (facing southeast)

Photo 6

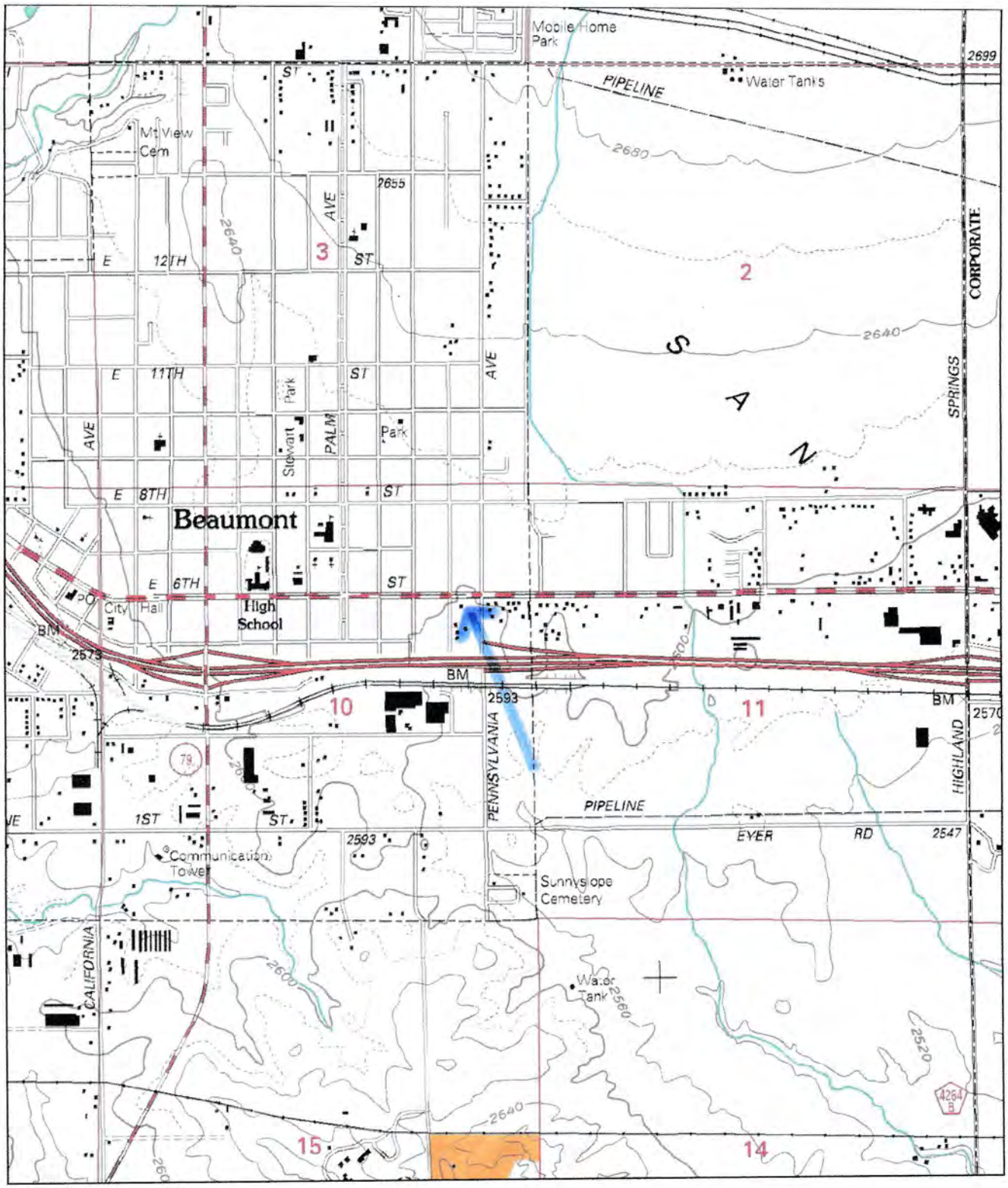
Vacant lot to the south of the main portion of the site (facing east)

Photo 7

AutoZone auto parts store (1151 E 6th Street) to the west of the site (facing southwest)

FIGURE 2

SITE LOCATION MAP



N

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0 3000 Ft

Map provided by MyTopo.com

FIGURE 3

RECENT AERIAL PHOTO SHOWING SITE/ITS VICINITY GERNERAL LAYOUT

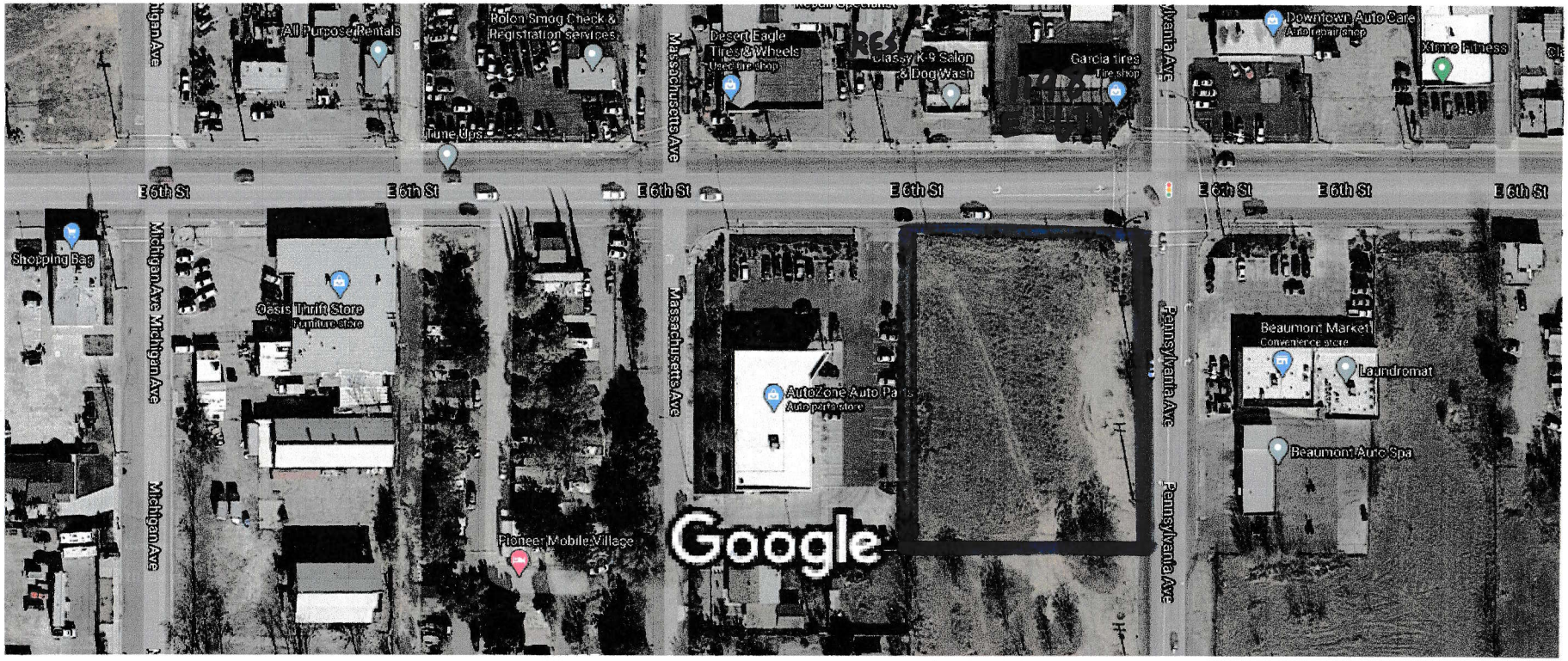

Downtown Auto Care
Auto repair shop
Xtreme Fitness
Garcia tires
Tire shop
Classy K-9 Salon & Dog Wash
Desert Eagle Tires & Wheels
Used tire shop
Rolon Smog Check & Registration services
All Purpose Rentals
Pennsylvania Ave
Massachusetts Ave
E 6th St
Beaumont Market
Convenience store
Laundromat
Beaumont Auto Spa
AutoZone Auto Parts
Auto parts store
Oasis Thrift Store
Furniture store
Shopping Bag
Michigan Ave
Pioneer Mobile Village
Google

FIGURE 4

SITE DEVELOPMENT PLAN

New Development of A Beyond Food Mart, 8 Pumps Gas Station and Carwash Tunnel

SOUTHWEST CORNER INTERSECTION OF SIXTH ST., & PENNSYLVANIA AVE.
CITY OF BEAUMONT, CA 92223

Project Directory

OWNER:
TABEL CENTER LLC
TEL: (951) 332-4521

ARCHITECT:
WINSTON LIU, P.E. & TOM LAM, A.I.A.
WWW LAND DESIGN CONSULTANTS
2335 W. FOOTHILL BLVD., SUITE 1,
UPLAND, CA 91786
TEL: (909) 608-7118

CIVIL ENGINEER:
LONE ENGINEERING
THOMAS LONE, P.E.
30815 RANCHO CALIFORNIA RD.,
SUITE 200-166
TEMECULA, CA 92591
TEL: (951) 442 9148

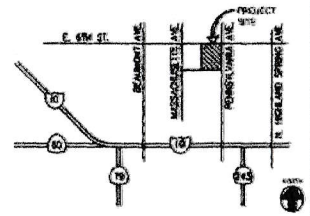
LANDSCAPE ARCHITECT:
PHILLMAY LANDSCAPE ARCHITECT
PHILLMAY
1837 W. 6TH ST.,
UPLAND, CA 91786
TEL.: (909) 373-1898

Sheet Index

A 1.01	SITE PLAN
A 1.10	CANOPY PLANS
A 1.11	CANOPY ELEVATIONS
A 2.01	FLOOR PLAN
A 2.02	ROOF PLAN
A 3.01	NORTH & SOUTH ELEVATIONS
A 3.02	EAST, WEST ELEVATIONS & MONUMENT SIGN
C-1	CONCEPTUAL GRADING & DRAINAGE PLAN
L-1	LANDSCAPE PLAN

Vicinity Map

NOT TO SCALE



Scope Of Work

NEW CONSTRUCTION OF A 8- PUMPS SERVICE STATION WITH CANOPY, UNDERGROUND STORAGE TANKS,FOOD MART AND CARWASH TUNNEL.

Project Data

PROJECT ADDRESS:	SWC OF SIXTH ST., & PENNSYLVANIA AVE. BEAUMONT, CA 92223
APN#:	418-122-020-6
LOT SIZE (GROSS):	56,0866 S.F. (1.286 ACRE)
LOT SIZE (NET) AFTER DEDICATION:	53,7366 S.F. (1.2 ACRE)
ZONING:	CG, COMMERCIAL GENERAL
CONSTRUCTION TYPE:	V-A
OCCUPANCY:	A2, B & M
FIRE SPRINKLER:	YES (NFPA 13)
FIRE ALARM:	YES (NFPA 72)
ALLOWABLE BUILDING AREA:	38,000 S.F. > 6,586 S.F. = O.K.

DEVELOPMENT REQUIREMENTS:	REQUIRED:	PROVIDED:
SETBACK REQUIREMENTS:		
FRONT YARD W/ PARKING	50'-0"	54'-4"
FRONT YEAR W/O PARKING	25'-0"	N/A
REAR & SIDE YARD (WHEN ADJITTING TO CG)	0,	0,
LOT COVERAGE	MAX. 50%	(6,586+4,316 S.F.) /(92,700 S.F.=10.0 ACR) 0.109
F.A.R.	MAX. 1.0	0.109
BUILDING HEIGHT	MAX. 50'	29'-0" (C-STORE) 10'-6" (CANOPY)
LOT FRONTAGE	MIN. 100'	232'-0" ±

BUILDING AREA:
A) GAS STATION WITH C-STORE, DRIVE THRU AND CAR WASH:

C-STORE	5,185 S.F.
CARWASH TUNNEL	1,401 S.F. (INCL.ELEC.&JUMP ROOM)
TOTAL AREA:	6,586 S.F. (SINGLE STORY)

B) CANOPY (28'-0"x(6'-6")): 4,316 S.F.

PARKING	REQUIRED:	PARKING PROVIDED:
A) C-STORE (1/200): 5,185/200 = 26	26	26 (INCL. 2 HCP)
B) GAS PUMP		
TOTAL:		26
LOADING/UNLOADING (12' x 50'): DRIVE-THRU	1 / 8 STACK	1 / 10 STACK
C) NORTH ZONE (1/200): 3,441/200 = 37	37	41 (INCL. 2HCP)
TOTAL	63	67 (56 STD, 9 COMPACT) (8.0' X COMPACT < 100)

STANDARD PARKING 9' X 19'
COMPACT PARKING 8' X 17'

BEAUMONT UNITED SCHOOL DISTRICT
ESTIMATED 3.0 MILLIONS GASOLINE GALLONS PER YEAR SALE

LANDSCAPE AREA REQUIREMENTS:	REQUIRED:	PROVIDED:
PARKING AREA(15%)	6,860 S.F.	3,642± S.F.(25.30%)
67% EXTERIOR EDGE	3,400 S.F.	10,088± S.F.
33% INTERIOR	2,660 S.F.	3,553± S.F.

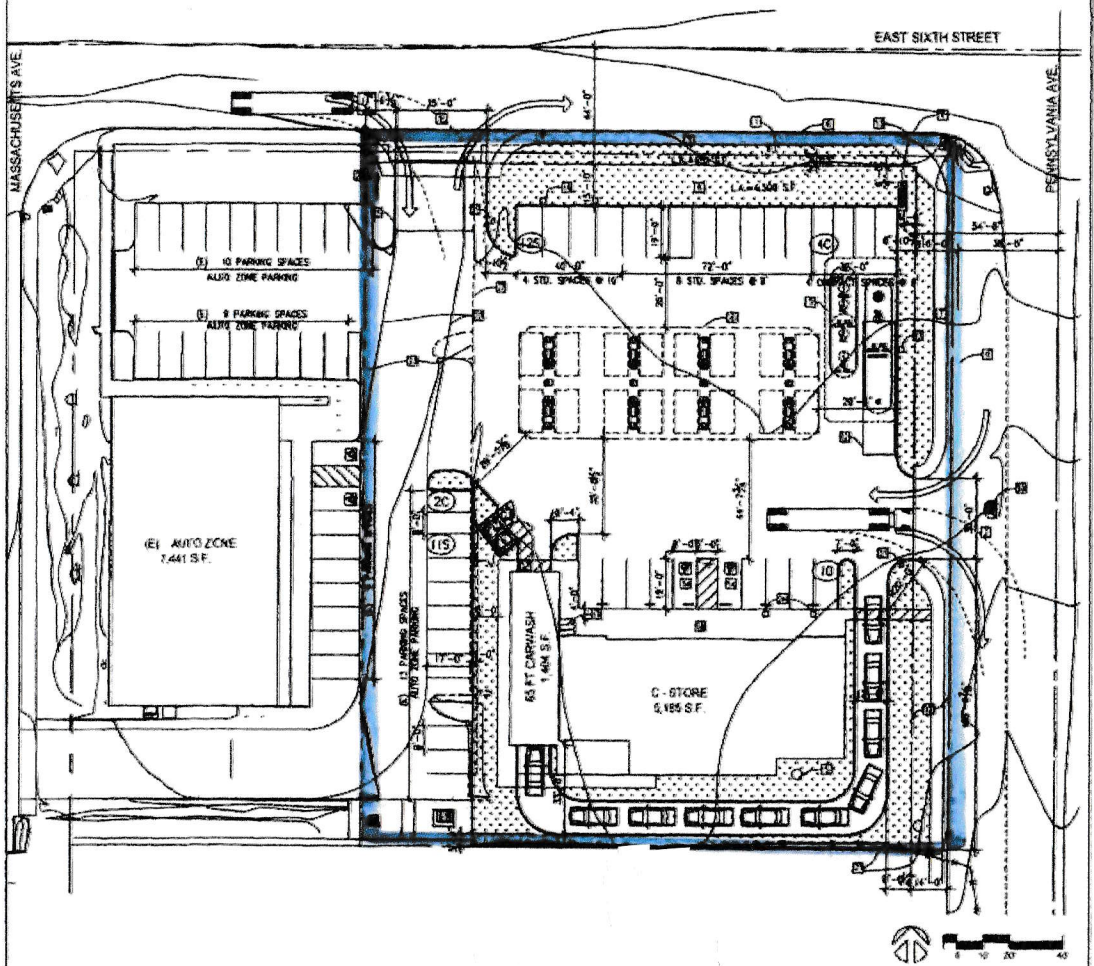
Legal Description

ASSESSOR'S PARCEL NUMBER: 418-122-020-6

ARCHITECTURE DESIGN PATENTED, TRADE ADDRESSED, AND OWNED BY BEYOND FOOD MART

Reference Notes

1. (E) PROPERTY LINES
2. (N) CURB AND GUTTER/DRIVEWAY (RIGHT IN & OUT)
3. (N) LANDSCAPE
4. (E) CURB AND GUTTER TO REMOVE
5. (N) HEALY TANK
6. (N) CONCRETE CURB & GUTTER
7. (N) CONC. SIDEWALK
8. (N) 36'X16'-6" CANOPY
9. (N) UNDER GROUND STORAGE TANKS
10. (N) TRANSFORMER PAD
11. (N) TRASH ENCLOSURE
12. (N) LOADING/UNLOADING (12'-0" x 50'-0")
13. (N) MONU. SIGN UNDER SEPARATE PERMIT.
14. (N) HCP PARKING
15. (N) HCP RAMP
16. (N) VACUUM @ 4 LOCS.
17. (N) 5'-0" WIDE HCP PATH OF TRAVEL PER CODE STD.
18. (N) CONC. SIDEWALK
19. BIKE RACK PER CITY'S STANDARD
20. (N) 26' WIDE FIRE LANE
21. (N) 6' HT. GRAY SPLIT FACE FENCE WALL
22. (N) 8' HT. STEEL TRELLIS W/ SOLAR PANEL
23. (N) AIR/WATER TOWER
24. (N) EVE. (2 LOCS)
25. (E) CONC. CURB
26. (E) SIGN TO REMAIN
27. (E) CURB TO REMOVE
28. (E) TRANSF. TO REMAIN
29. (E) TRASH TO REMAIN
30. (E) STREET WIDE TO REMOVE
31. (N) RIGHT TURN EXIT ONLY SIGN
32. (N) STREET DEDICATION
33. (E) EGRESS AND INGRESS EASEMENT



Proposed Site Plan

SCALE: 1"=20'-0"

WWW LAND DESIGN CONSULTANTS INC.
ARCHITECTURE, CIVIL ENGINEERING & INTERIOR
2335 W. FOOTHILL BLVD., STE 1, UPLAND, CA 91786
PHONE: (909) 608-7118 FAX: (909) 946-1137

PROJECT: NEW DEVELOPMENT OF A BEYOND FOOD MART, 8 PUMPS GAS STATION AND CARWASH TUNNEL
ADDRESS: SOUTHWEST CORNER INTERSECTION OF SIXTH ST., & PENNSYLVANIA AVE., BEAUMONT, CA 92223
CLIENT: TABEL CENTER LLC

PROPOSED SITE PLAN, PROJECT DIRECTORY, DATA AND REFERENCE

SHEET TITLE

KEY MAP | SEAL/STAMP

JOB NO.
DRAWN BY: TL/TL
SUPERVISED BY: TL
CHECKED BY: TL
PLAN CHECK
PERMIT SET
BID SET

REVISIONS

SHEET NO:

A1.01

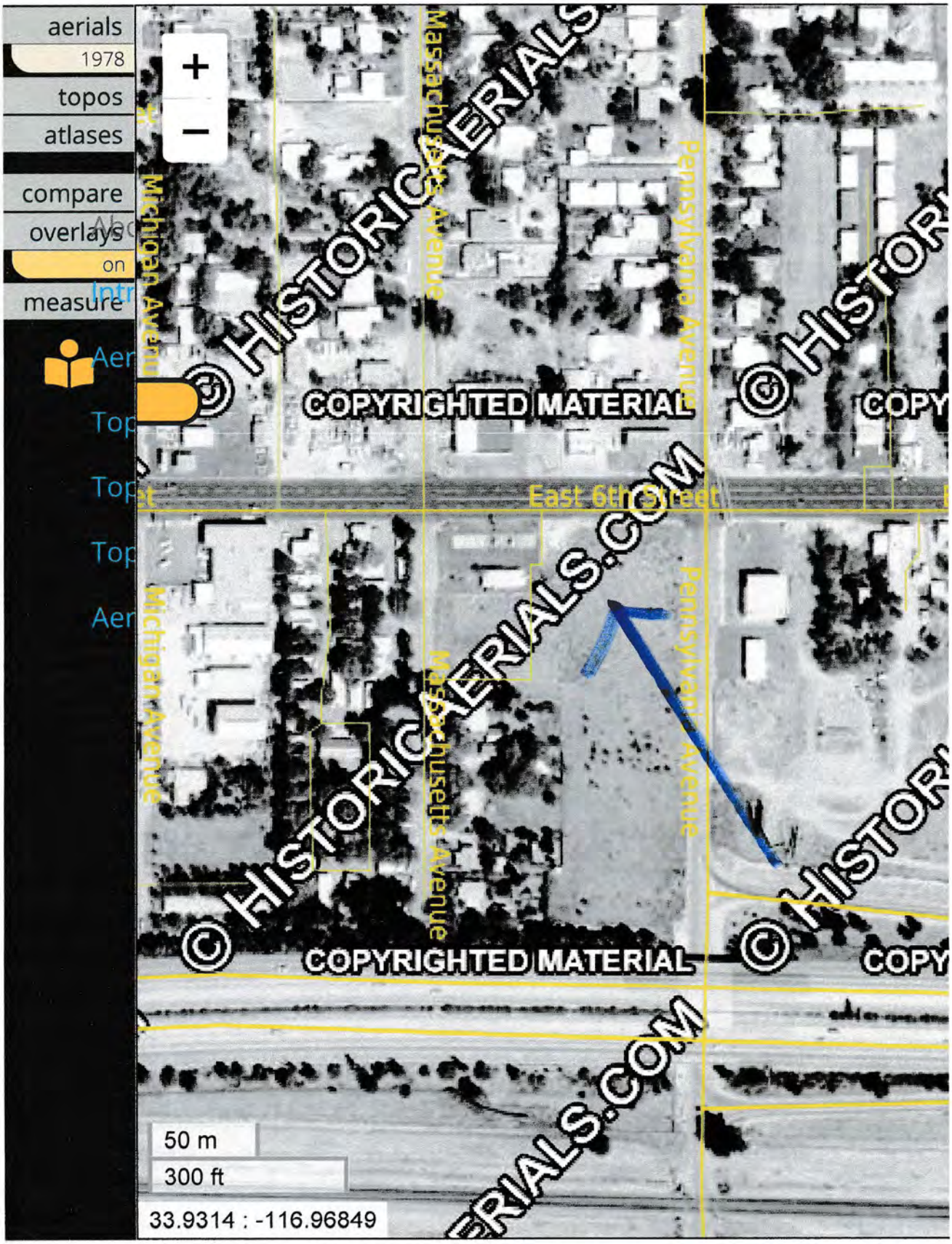
OF SHEETS

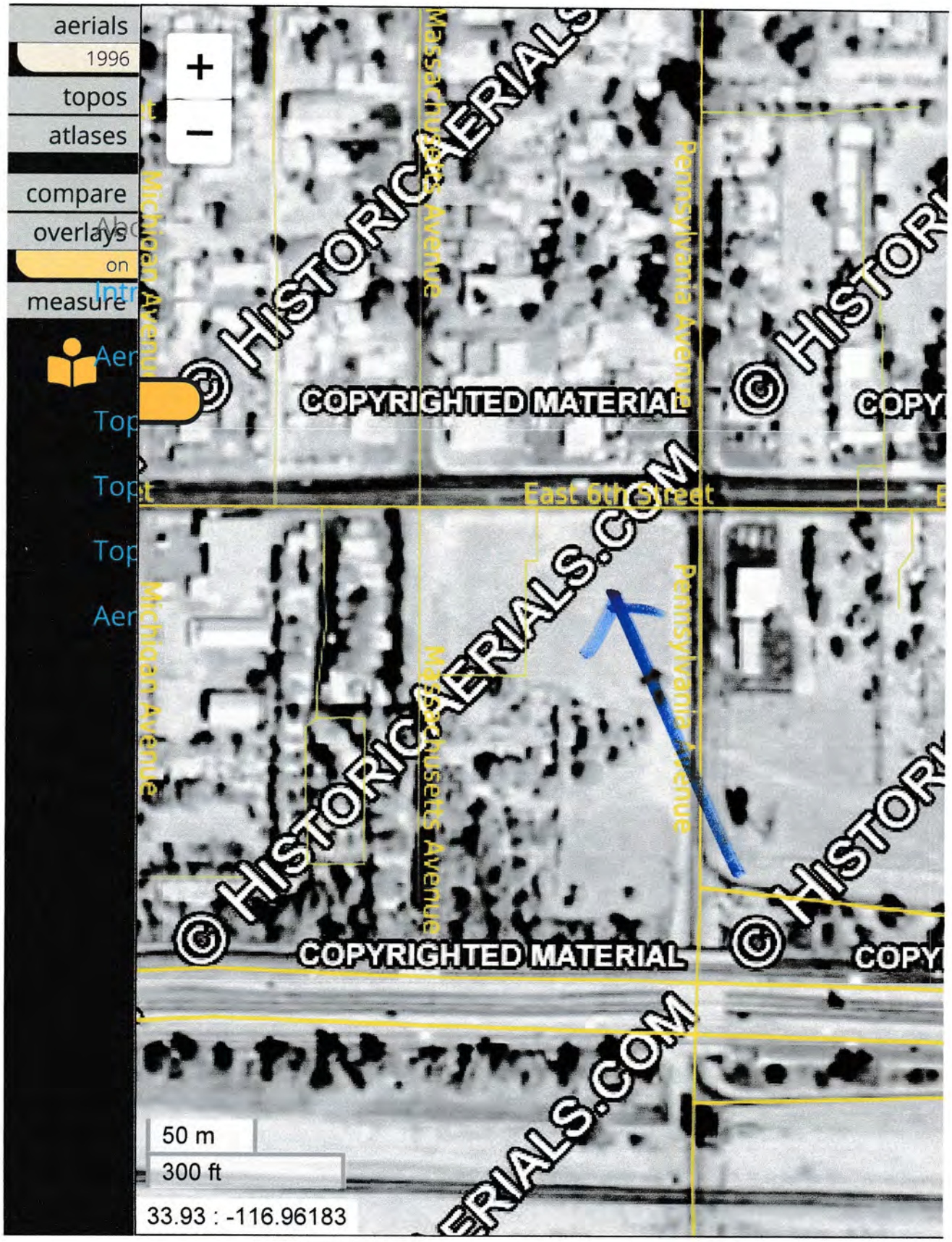
S H E E T

APPENDIX B

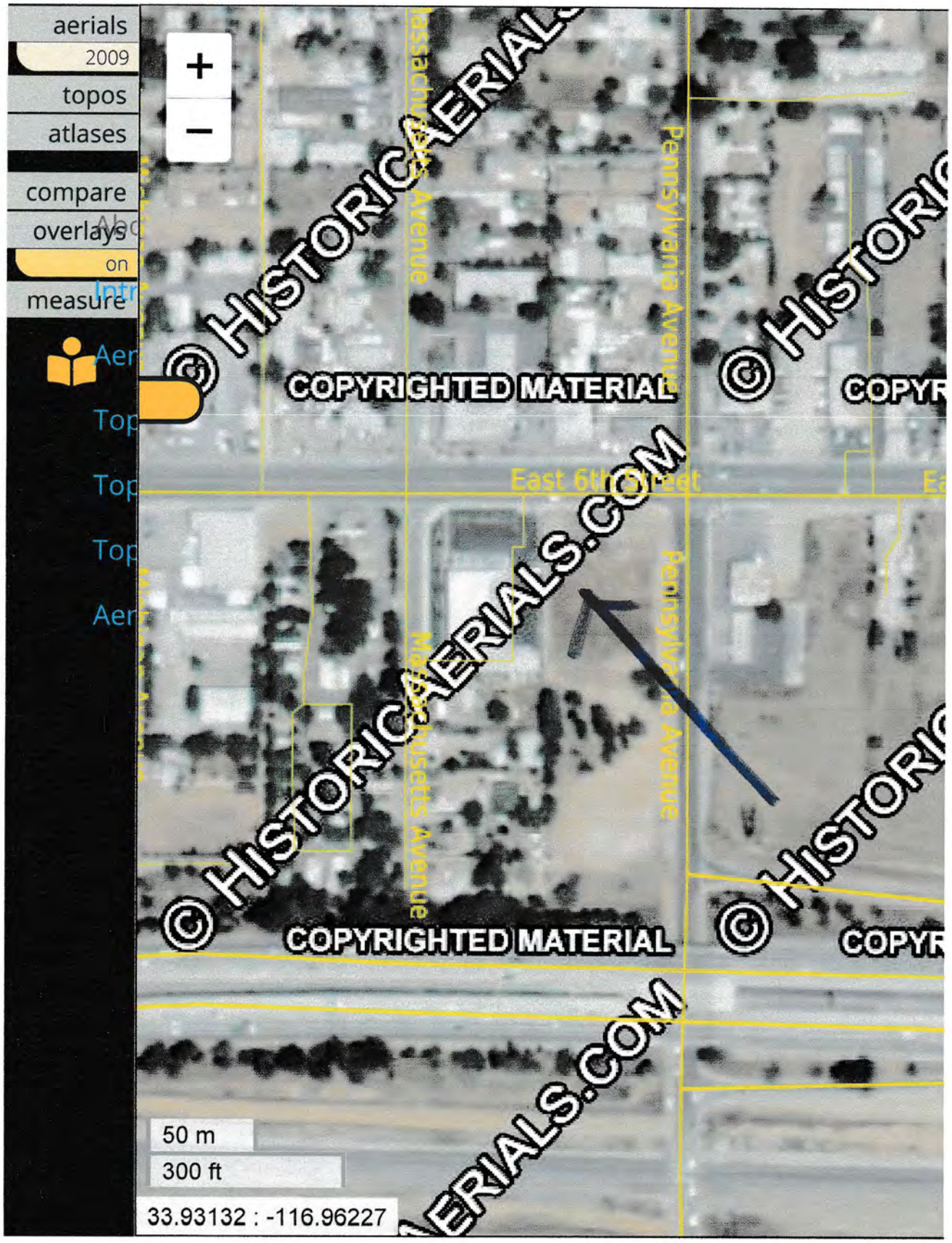
HISTORIC AERIAL PHOTO RECORDS

aerials
1966
topos
atlases
compare
overlays
on
measure
Massachusetts Avenue
Pennsylvania Avenue
Michigan Avenue
East 6th Street
COPYRIGHTED MATERIAL
HISTORICAERIALS.COM
50 m
300 ft
33.93042 : -116.96877


aerials
1978
topos
atlases
compare
overlays
on
measure
Michigan Avenue
Massachusetts Avenue
Pennsylvania Avenue
East 6th Street
COPYRIGHTED MATERIAL
HISTORICAERIALS.COM
50 m
300 ft
33.9314 : -116.96849


aerials
1996
topos
atlases
compare
overlays
on
measure
Michigan Avenue
Massachusetts Avenue
Pennsylvania Avenue
East 6th Street
COPYRIGHTED MATERIAL
HISTORICAERIALS.COM
50 m
300 ft
33.93 : -116.96183

aerials
2005
topos
atlases
compare
overlays
on
measure
Michigan Avenue
Massachusetts Avenue
Pennsylvania Avenue
East 6th Street
COPYRIGHTED MATERIAL
HISTORICAERIALS.COM
50 m
300 ft
33.93111 : -116.96877


aerials
2009
topos
atlases
compare
overlays
on
measure
Massachusetts Avenue
Pennsylvania Avenue
East 6th Street
COPYRIGHTED MATERIAL
HISTORICAERIALS.COM
50 m
300 ft
33.93132 : -116.96227

aerials
2016
topos
atlases
compare
overlays
on
measure
Pennsylvania Avenue
East 6th Street
Massachusetts Avenue
COPYRIGHTED MATERIAL
HISTORICAERIALS.COM
50 m
300 ft
33.93044 : -116.96128

APPENDIX C

GOVERNMENT RECORDS SEARCH DATABASE

33.92896910816366, -116.9665015416892
prepared for: REM
Ref:

May 7, 2020

Environmental Radius Report

NETRONLINE

2055 E. Rio Salado Pkwy
Tempe, AZ 85381
480-967-6752

Summary

	< 1/4	1/4 - 1/2	1/2 - 1
National Priorities List (NPL)			
CERCLIS List		1	
CERCLIS NFRAP			
RCRA CORRACTS Facilities		1	
RCRA non-CORRACTS TSD Facilities			
Federal Institutional Control / Engineering Control Registry			
Emergency Response Notification System (ERNS)		1	1
US Toxic Release Inventory		1	3
US RCRA Generators (CESQG, SQG, LQG)	5	6	21
US ACRES (Brownfields)			
US NPDES		2	3
US Air Facility System (AIRS / AFS)			
CA Registered Underground Storage Tanks			4
CA Leaking Underground Storage Tanks			6
CA CERCLIS Equivalent			
CA NPL Equivalent			
CA Hazardous Waste Sites		2	3
CA Activity Use Restrictions			
CA Spills, Leaks, Investigations, and Cleanups		1	8
CA Solid Waste Landfills		1	
CA Oil and Gas Wells			
CA Voluntary Cleanup Sites			

National Priorities List (NPL)

This database includes Proposed Sites, Final Sites and Deleted NPL Sites. The Superfund Program, administered under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is an EPA Program to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. The NPL (National Priorities List) is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.

The boundaries of an NPL site are not tied to the boundaries of the property on which a facility is located. The release may be contained with a single property's boundaries or may extend across property boundaries onto other properties. The boundaries can, and often do change as further information on the extent and degree of contamination is obtained.

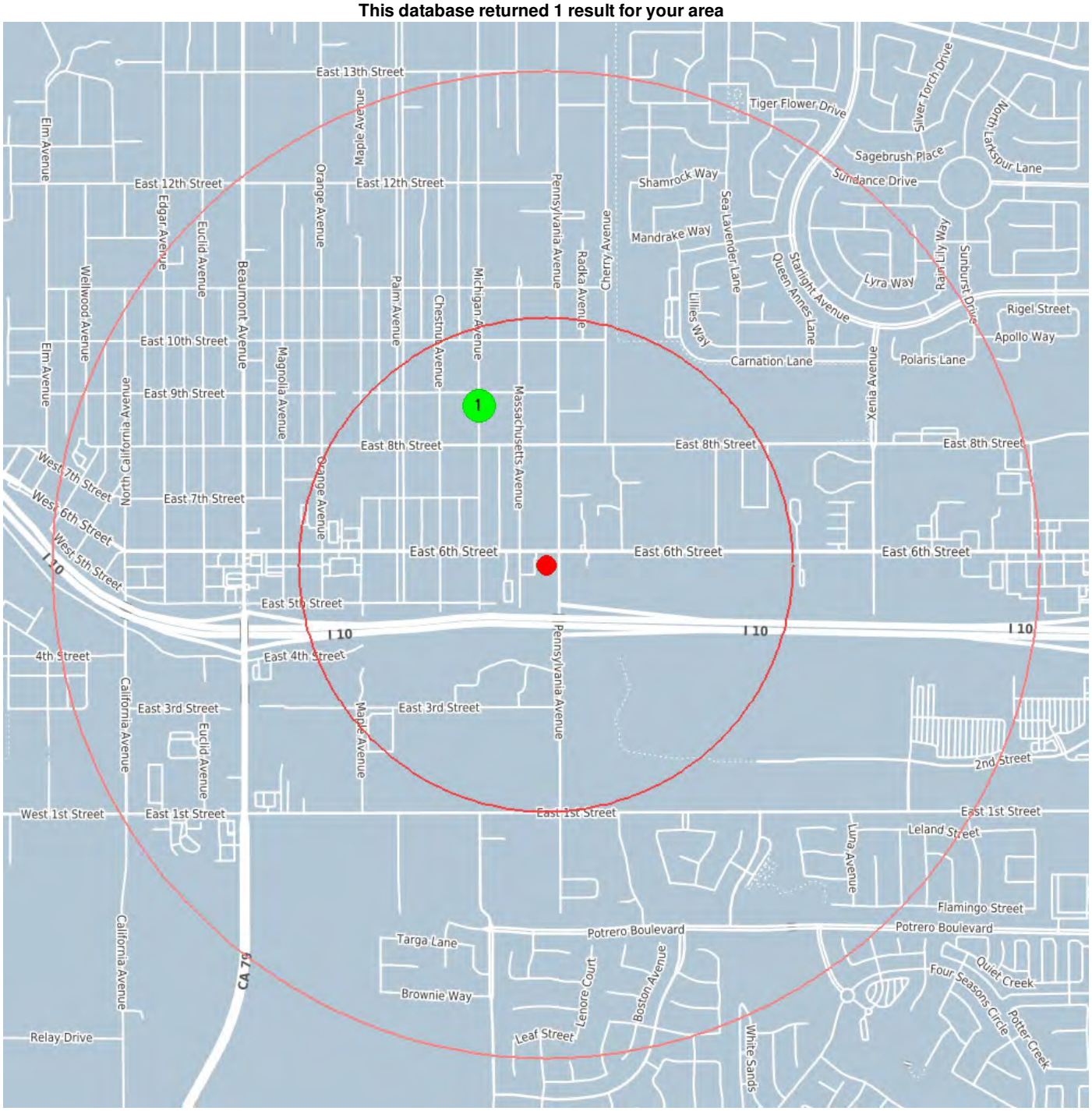
This database returned no results for your area

CERCLIS List

The United States Environmental Protection Agency (EPA) investigates known or suspected uncontrolled or abandoned hazardous substance facilities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA maintains a comprehensive list of these facilities in a database known as the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS). These sites have either been investigated or are currently under investigation by the EPA for release or threatened release of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and ultimately placed on the National Priority List (NPL).

CERCLIS sites designated as "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an intitial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration.

This database returned 1 result for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

CERCLIS List

1

Coordinates	33.93364, -116.968865
Distance to site	1847 ft / 0.350 mi NW

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110045395309
EPA Identifier	110045395309
Primary Name	CARBONLITE SODIUM HYDROXIDE SPILL
Address	875 MICHIGAN AVE.
City	RIVERSIDE
County	RIVERSIDE
State	CA
Zipcode	92507-1843
Programs	SEMS:CAN000909395
Program Interests	SUPERFUND (NON-NPL)
Updated On	26-MAY-2017 14:39:00
Recorded On	13-APR-2012 11:02:56

CERCLIS NFRAP

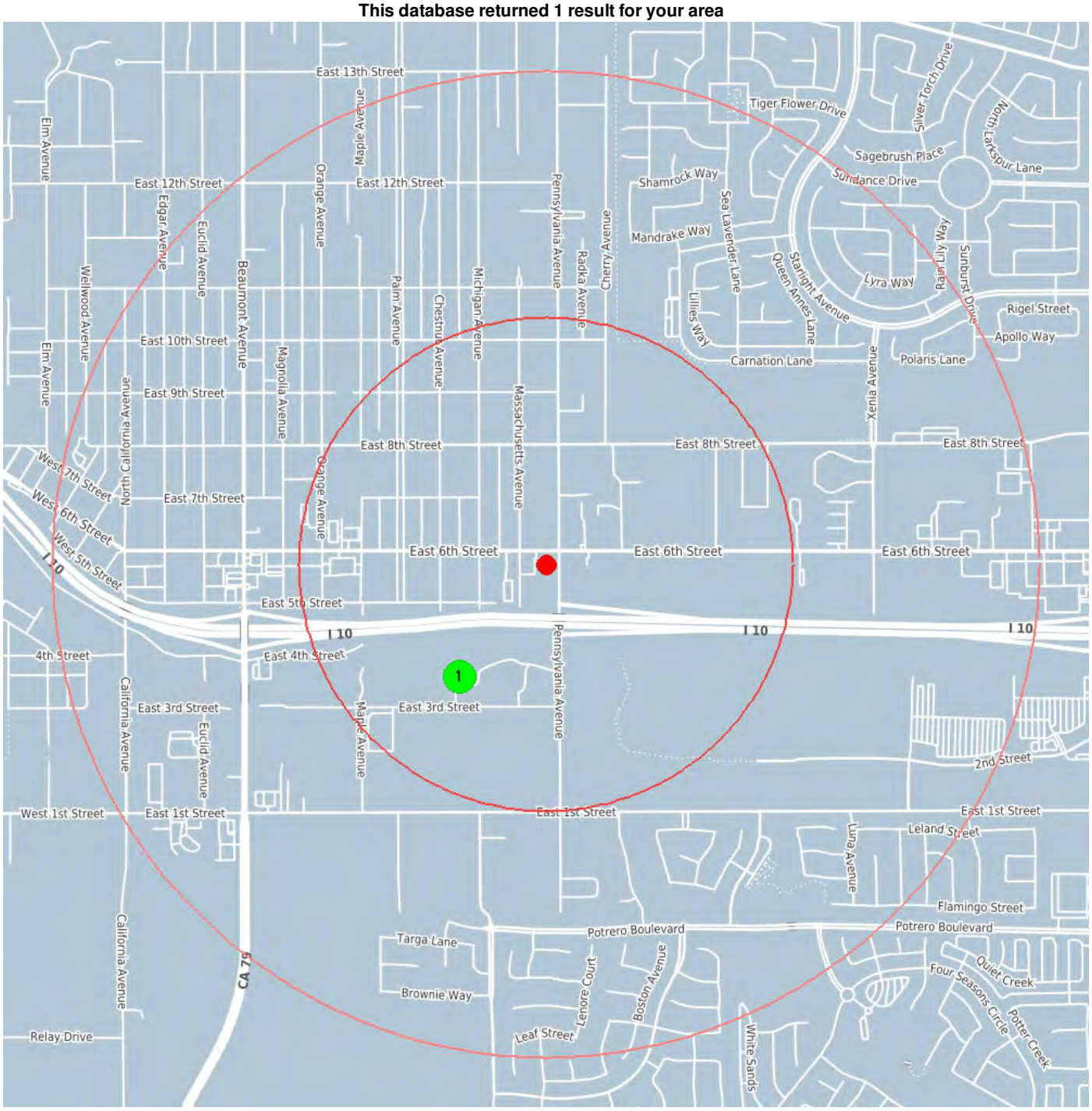
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" NFRAP have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the site being placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed these NFRAP sites from CERCLIS to lift unintended barriers to the redevelopment of these properties. This policy change is part of EPA"s Brownfields Redevelopment Program to help cities, states, private investors and affected citizens promote economic redevelopment of unproductive urban sites.

This database returned no results for your area

RCRA CORRACTS Facilities

The United States Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA). The EPA maintains the Corrective Action Report (CORRACTS) database of Resource Conservation and Recovery Act (RCRA) facilities that are undergoing "corrective action." A "corrective action order" is issued pursuant to RCRA Section 3008(h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility"s boundary and can be required regardless of when the release occurred, even if it predated RCRA.

This database returned 1 result for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

RCRA CORRACTS Facilities

1

Coordinates	33.9256681228857, -116.969555858795
Distance to site	1518 ft / 0.288 mi SW

Site Name	SQUARE D COMPANY
EPA Facility Website	http://oaspub.epa.gov/enviro/fac_gateway.main?p_regid=110002318867
Facility Registry ID	110002318867
Address	1060 EAST THIRD STREET
City	BEAUMONT
State	CA
Zip	92223

RCRA non-CORRACTS TSD Facilities

The United States Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA). The EPA"s RCRA Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilites database is a compilation by the EPA of facilities that report generation, storage, transportation, treatment, or disposal of hazardous waste. RCRA Permitted Treatment, Storage, Disposal Facilities (RCRA-TSD) are facilities which treat, store and/or dispose of hazardous waste.

This database returned no results for your area

Federal Institutional Control / Engineering Control Registry

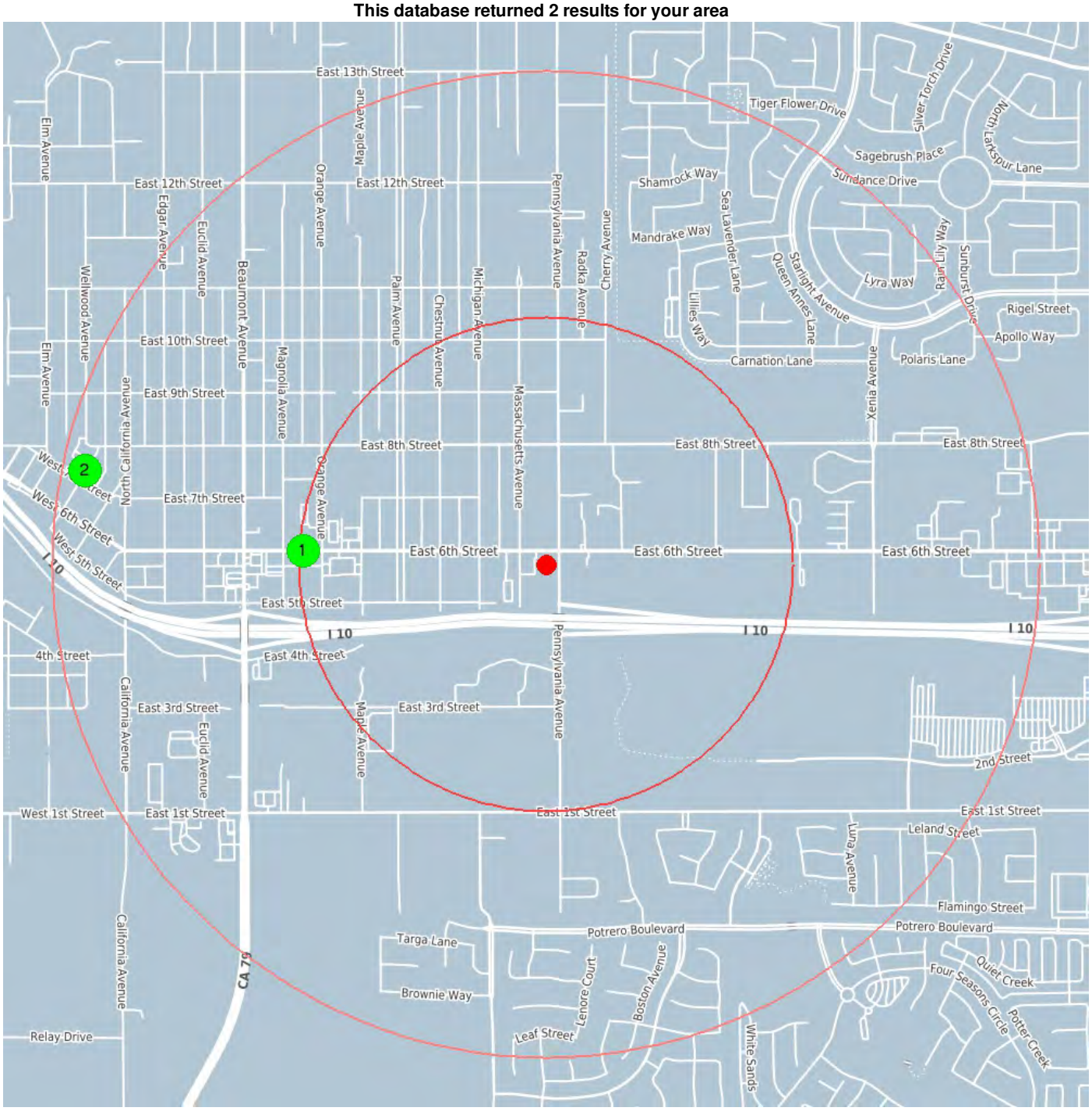
Federal Institutional Control / Engineering Control Registry

This database returned no results for your area

Emergency Response Notification System (ERNS)

The Emergency Response Notification System (ERNS) is a national computer database used to store information on unauthorized releases of oil and hazardous substances. The program is a cooperative effort of the Environmental Protection Agency, the Department of Transportation Research and Special Program Administration"s John Volpe National Transportation System Center and the National Response Center. There are primarily five Federal statutes that require release reporting: the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section 103; the Superfund Amendments and Reauthorization Act(SARA) Title III Section 304; the Clean Water Act of 1972(CWA) section 311(b)(3); and the Hazardous Material Transportation Act of 1974(HMTA section 1808(b).

This database returned 2 results for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

Emergency Response Notification System (ERNS)

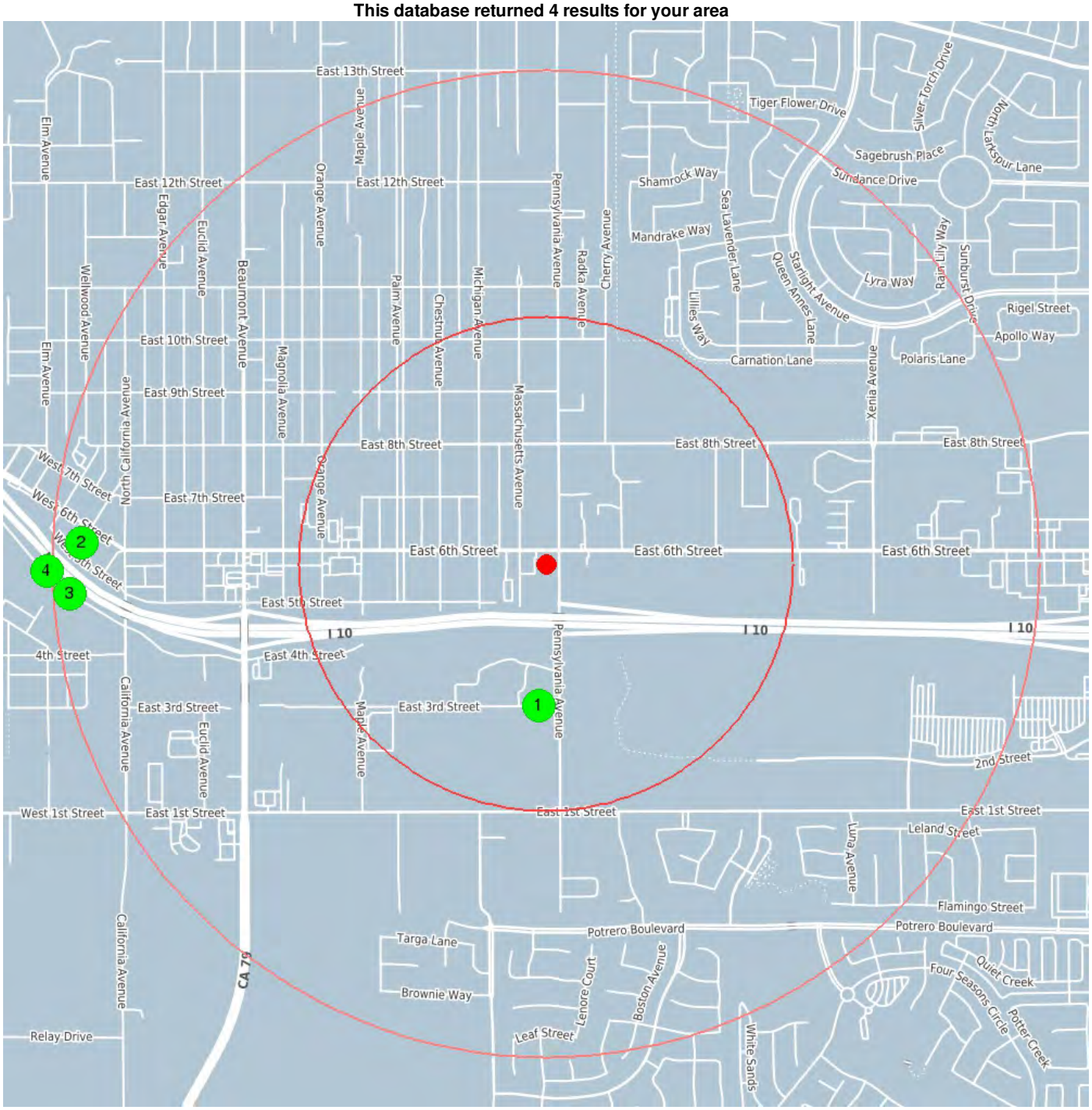
1		
	Coordinates	33.929370880127, -116.97505950928
	Distance to site	2594 ft / 0.491 mi W
Incident		***WEB REPORT*** OUR TRACTOR/TRAILER WAS TRAVLING EAST ON HWY 10 IN CALIMESA CA, WHEN SUDDELY THE DRIVER HEARD A LOUD BANG, HE PULLED OVER AND DISICOVERD SOMETHING STRUCK THE FUEL TANK CAUSING A RUPTURE. AS A RESULT WE LOSS APROX 50 GALLONS OF DIESEL FUEL, WHICH SPILLED ON THE ROAD AND DIRT SHOULDER CALIFORNIA HWY PATROL, COUNTY FIRE, AND COUNTY HAZMAT UNITS ALL WERE NOTIFICED AND ARRIVED ON THE SCENE. THE SPILL WAS CONTAINED AND A PRIVATE HAZMAT CLEANUP COMPANY CLEANED THE AREA
Incident Date		12/2/2013 16:20
Incident location		EAST BOUND HIGHWAY 10 AT THE CALIMESA OFF RAMP
Year Reported		2013
Address		EAST BOUND HIGHWAY 10
City		BEAUMOUNT
State		CA
County		RIVERSIDE

2		
	Coordinates	33.931712955236, -116.98280006647
	Distance to site	5033 ft / 0.953 mi W
Incident		AN AUTOMOBILE STRUCK A PAD-MOUNTED TRANSFORMER. MINERAL OIL DISCHARGED FROM THE TRANSFORMER AND THE TRANSFORMER CAUGHT ON FIRE AS A RESULT.
Incident Date		10/28/2011 12:30
Year Reported		2011
Address		715 WELLWOOD AVE
City		BEAUMONT
State		CA
County		RIVERSIDE

US Toxic Release Inventory

The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. TRI reporters for all reporting years are provided in the file.

This database returned 4 results for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

1

Coordinates	33.92481, -116.96675
Distance to site	1519 ft / 0.288 mi S
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002318867
EPA Identifier	110002318867
Primary Name	SQUARE D COMPANY
Address	1060 EAST THIRD STREET
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223-3020
NAICS Codes	335931
SIC Codes	3497
SIC Descriptions	METAL FOIL AND LEAF
Programs	BR:CAD050746775, CA-ENVIROVIEW:201431, HWTS-DATAMART:CAD050746775, RCRAINFO:CAD050746775, TRIS:92223YTSND1060W
Program Interests	HAZARDOUS WASTE BIENNIAL REPORTER, SQG, STATE MASTER, TRI REPORTER, TSD
Updated On	31-DEC-2015 09:53:08
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	CURRENT-CARRYING WIRING DEVICE MANUFACTURING.

2

Coordinates	33.92959, -116.98289
Distance to site	4965 ft / 0.940 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110012198246
EPA Identifier	110012198246
Primary Name	PRECISION STAMPINGS INC
Address	500 EGAN AVE
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	335931
SIC Codes	3643
SIC Descriptions	CURRENT-CARRYING WIRING DEVICES
Programs	CA-CERS:10320232, CA-ENVIROVIEW:144738, HWTS-DATAMART:CAR000091645, ICIS:1800059806, NPDES:CAZ461354, RCRAINFO:CAR000091645, TRIS:92223PRCSN5EGAN
Program Interests	ENFORCEMENT/COMPLIANCE ACTIVITY, FORMAL ENFORCEMENT ACTION, ICIS-NPDES NON-MAJOR, SQG, STATE MASTER, STORM WATER INDUSTRIAL, TRI REPORTER
Updated On	28-MAR-2016 17:06:11
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	CURRENT-CARRYING WIRING DEVICE MANUFACTURING.

3

Coordinates	33.928101, -116.983311
Distance to site	5097 ft / 0.965 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110055672268
EPA Identifier	110055672268
Primary Name	ROBERTSON'S READY MIX
Address	452 W LUIS ESTRADA RD
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	327320
SIC Codes	0000, 3273
SIC Descriptions	READY-MIXED CONCRETE
Programs	CA-CERS:10316815, CA-ENVIROVIEW:62448, RCRAINFO:CAL000372426, TRIS:9222WRBRTS452WL
Program Interests	STATE MASTER, TRANSPORTER, TRI REPORTER
Updated On	10-JUN-2016 14:17:00
Recorded On	15-SEP-2013 11:16:18
NAICS Descriptions	READY-MIX CONCRETE MANUFACTURING.

4

Coordinates	33.928101, -116.983311
Distance to site	5097 ft / 0.965 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110067124230
EPA Identifier	110067124230
Primary Name	BEAUMONT PLANT 7
Address	452 W. LUIS ESTRADA ROAD
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
Programs	TRIS:9222WBMNTP452WL
Program Interests	TRI REPORTER
Recorded On	31-DEC-2015 09:50:18

US RCRA Generators (CESQG, SQG, LQG)

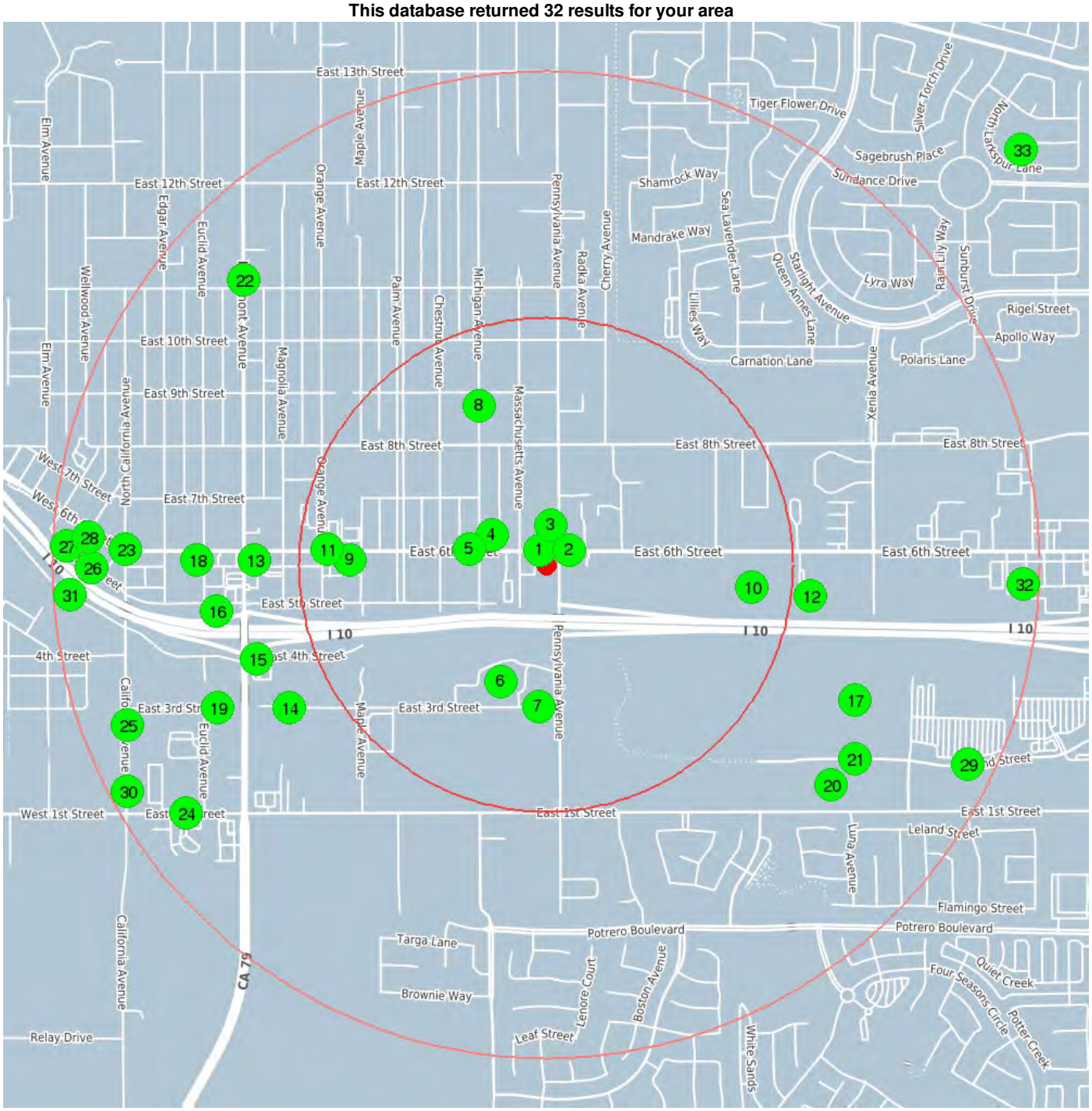
The United States Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA). EPA maintains a database of facilities, which generate hazardous waste or treat, store, and/or dispose of hazardous wastes.

Conditionally Exempt Small Quantity Generators (CESQG) generate 100 kilograms or less per month of hazardous waste, or 1 kilogram or less per month of acutely hazardous waste.

Small Quantity Generators (SQG) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Large Quantity Generators (LQG) generate 1,000 kilograms per month or more of hazardous waste, or more than 1 kilogram per month of acutely hazardous waste.

This database returned 32 results for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

US RCRA Generators (CESQG, SQG, LQG)

1

Coordinates	33.92941, -116.966721
Distance to site	174 ft / 0.033 mi NW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110022900814
EPA Identifier	110022900814
Primary Name	AUTOZONE #2882
Address	1151 EAST 6TH STREET
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223-2585
NAICS Codes	441310
SIC Codes	5531
SIC Descriptions	AUTO AND HOME SUPPLY STORES
Programs	CA-CERS:10139773, CA-ENVIROVIEW:96352, RCRAINFO:CAL000296919, UORS:33-C-07085
Program Interests	STATE MASTER, TRANSPORTER
Updated On	14-OCT-2015 10:11:22
Recorded On	19-OCT-2005 15:03:25
NAICS Descriptions	AUTOMOTIVE PARTS AND ACCESSORIES STORES.

2

Coordinates	33.92941, -116.96569
Distance to site	293 ft / 0.056 mi NE
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002749367
EPA Identifier	110002749367
Primary Name	CIRCLE K STORE #509
Address	1201 EAST 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
Programs	RCRAINFO:CAD981680457
Program Interests	SQG
Updated On	29-DEC-2014 08:58:03
Recorded On	01-MAR-2000 00:00:00

3

Coordinates	33.92965, -116.96577
Distance to site	332 ft / 0.063 mi NE
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110066422008
EPA Identifier	110066422008
Primary Name	DOWNTOWN AUTO CARE
Address	1200 E 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	811111
Programs	CA-ENVIROVIEW:112550, RCRAINFO:CAL000248685
Program Interests	STATE MASTER, TRANSPORTER
Recorded On	14-OCT-2015 11:26:22
NAICS Descriptions	GENERAL AUTOMOTIVE REPAIR.

4

Coordinates	33.92983, -116.96839
Distance to site	652 ft / 0.124 mi NW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065347495
EPA Identifier	110065347495
Primary Name	ALL PURPOSE RENTALS
Address	1048 E 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	532412
Programs	CA-ENVIROVIEW:90938, RCRAINFO:CAL000260740
Program Interests	STATE MASTER, UNSPECIFIED UNIVERSE
Recorded On	13-OCT-2015 07:27:27
NAICS Descriptions	CONSTRUCTION, MINING, AND FORESTRY MACHINERY AND EQUIPMENT RENTAL AND LEASING.

5

Coordinates	33.929408, -116.96918
Distance to site	826 ft / 0.157 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110017963186
EPA Identifier	110017963186
Primary Name	FAST LUBE AND TUNE
Address	975 EAST 6TH STREET
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223-
NAICS Codes	811111
Programs	CA-ENVIROVIEW:29774, RCRAINFO:CAL000264468, UORS:33-C-06635
Program Interests	STATE MASTER, TRANSPORTER
Updated On	10-OCT-2015 06:56:54
Recorded On	23-SEP-2004 15:03:15
NAICS Descriptions	GENERAL AUTOMOTIVE REPAIR.

6

Coordinates	33.92554, -116.9681
Distance to site	1341 ft / 0.254 mi SW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065461912
EPA Identifier	110065461912
Primary Name	PRIORITY PALLET INC
Address	1060 E 3RD ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	321920
SIC Codes	2448
SIC Descriptions	WOOD PALLETS AND SKIDS
Programs	CA-ENVIROVIEW:181206, NPDES:CAZ353624, OSHA-OIS:307454892, OSHA-OIS:316213438, OSHA-OIS:341472694, OSHA-OIS:341763506, RCRAINFO:CAL000376441
Program Interests	ICIS-NPDES NON-MAJOR, OSHA ESTABLISHMENT, STATE MASTER, STORM WATER INDUSTRIAL, TRANSPORTER
Recorded On	13-OCT-2015 09:53:32
NAICS Descriptions	WOOD CONTAINER AND PALLET MANUFACTURING.

7

Coordinates	33.92481, -116.96675
Distance to site	1519 ft / 0.288 mi S
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002318867
EPA Identifier	110002318867
Primary Name	SQUARE D COMPANY
Address	1060 EAST THIRD STREET
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223-3020
NAICS Codes	335931
SIC Codes	3497
SIC Descriptions	METAL FOIL AND LEAF
Programs	BR:CAD050746775, CA-ENVIROVIEW:201431, HWTS-DATAMART:CAD050746775, RCRAINFO:CAD050746775, TRIS:92223YTSND1060W
Program Interests	HAZARDOUS WASTE BIENNIAL REPORTER, SQG, STATE MASTER, TRI REPORTER, TSD
Updated On	31-DEC-2015 09:53:08
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	CURRENT-CARRYING WIRING DEVICE MANUFACTURING.

8

Coordinates	33.93364, -116.968865
Distance to site	1847 ft / 0.350 mi NW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110045463020
EPA Identifier	110045463020
Primary Name	CARBONLITE INDUSTRIES LLC
Address	875 MICHIGAN AVE
City	RIVERSIDE
County	RIVERSIDE
State	CA
Zipcode	92507
NAICS Codes	326199
Programs	CA-ENVIROVIEW:186235, ICIS:3000004515, NPDES:CAZ419147, OSHA-OIS:341440287, RCRAINFO:CAL000367053
Program Interests	ENFORCEMENT/COMPLIANCE ACTIVITY, ICIS-NPDES NON-MAJOR, OSHA ESTABLISHMENT, STATE MASTER, STORM WATER INDUSTRIAL, TRANSPORTER
Updated On	15-OCT-2015 07:39:34
Recorded On	09-MAY-2012 16:05:11
NAICS Descriptions	ALL OTHER PLASTICS PRODUCT MANUFACTURING.

9

Coordinates	33.92912, -116.97343
Distance to site	2097 ft / 0.397 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065168936
EPA Identifier	110065168936
Primary Name	O'REILLY AUTO PARTS #2678
Address	695 E 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	441310
SIC Codes	5013
SIC Descriptions	MOTOR VEHICLE SUPPLIES AND NEW PARTS
Programs	CA-ENVIROVIEW:53003, RCRAINFO:CAL000396047
Program Interests	STATE MASTER, TRANSPORTER
Recorded On	10-OCT-2015 09:41:52
NAICS Descriptions	AUTOMOTIVE PARTS AND ACCESSORIES STORES.

10

Coordinates	33.92831, -116.95922
Distance to site	2217 ft / 0.420 mi E
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110055707230
EPA Identifier	110055707230
Primary Name	BIG TEX TRAILERS
Address	1425 E 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	336212, 811112
SIC Codes	3715
SIC Descriptions	TRUCK TRAILERS
Programs	CA-CERS:10320346, CA-ENVIROVIEW:98800, RCRAINFO:CAL000440853
Program Interests	STATE MASTER, TRANSPORTER
Updated On	13-OCT-2015 14:57:27
Recorded On	15-SEP-2013 11:44:28
NAICS Descriptions	AUTOMOTIVE EXHAUST SYSTEM REPAIR., TRUCK TRAILER MANUFACTURING.

11

Coordinates	33.92911, -116.97385
Distance to site	2224 ft / 0.421 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065515865
EPA Identifier	110065515865
Primary Name	FAMILY DOLLAR 9421
Address	649 E 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	452990
SIC Codes	5331
SIC Descriptions	VARIETY STORES
Programs	CA-ENVIROVIEW:29595, RCRAINFO:CAL000384072
Program Interests	STATE MASTER, TRANSPORTER
Recorded On	13-OCT-2015 10:51:46
NAICS Descriptions	ALL OTHER GENERAL MERCHANDISE STORES.

12

Coordinates	33.92806, -116.95716
Distance to site	2846 ft / 0.539 mi E
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110064921857
EPA Identifier	110064921857
Primary Name	BOB MILLER R V
Address	1463 E 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
Programs	CA-ENVIROVIEW:12879, RCRAINFO:CAL000025725
Program Interests	STATE MASTER, TRANSPORTER
Recorded On	10-OCT-2015 07:26:20

13

Coordinates	33.9291, -116.97681
Distance to site	3120 ft / 0.591 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110057123599
EPA Identifier	110057123599
Primary Name	TESORO (USA) 63349
Address	401 E SIXTH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	447110
SIC Codes	5541
SIC Descriptions	GASOLINE SERVICE STATIONS
Programs	CA-CERS:10329868, CA-ENVIROVIEW:74592, RCRAINFO:CAL000373502
Program Interests	STATE MASTER, TRANSPORTER
Updated On	14-OCT-2015 11:00:14
Recorded On	27-FEB-2014 15:31:51
NAICS Descriptions	GASOLINE STATIONS WITH CONVENIENCE STORES.

14

Coordinates	33.92479, -116.97556
Distance to site	3137 ft / 0.594 mi SW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002938126
EPA Identifier	110002938126
Primary Name	DURA PLASTIC PRODUCTS INC
Address	533 E THIRD ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223-2797
NAICS Codes	326122
SIC Codes	3089
SIC Descriptions	PLASTICS PRODUCTS, NOT ELSEWHERE CLASSIFIED
Programs	CA-ENVIROVIEW:112969, HWTS-DATAMART:CAR000075010, NPDES:CAZ210918, OSHA-OIS:316210707, RCRAINFO:CAR000075010
Program Interests	ICIS-NPDES NON-MAJOR, OSHA ESTABLISHMENT, SQG, STATE MASTER, STORM WATER INDUSTRIAL
Updated On	10-OCT-2015 08:45:05
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	PLASTICS PIPE AND PIPE FITTING MANUFACTURING.

15

Coordinates	33.926216, -116.97672
Distance to site	3251 ft / 0.616 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002741463
EPA Identifier	110002741463
Primary Name	PALM SPRINGS OIL #4
Address	444 E 4TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
Programs	RCRAINFO:CAD981662000
Program Interests	SQG
Updated On	08-AUG-2010 18:14:42
Recorded On	01-MAR-2000 00:00:00

16

Coordinates	33.92763, -116.97813
Distance to site	3553 ft / 0.673 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065300105
EPA Identifier	110065300105
Primary Name	LEE'S AUTO BODY
Address	325 E 5TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
Programs	CA-ENVIROVIEW:43879, RCRAINFO:CAL000039023
Program Interests	STATE MASTER, TRANSPORTER
Recorded On	10-OCT-2015 10:39:13

17

Coordinates	33.925, -116.95557
Distance to site	3611 ft / 0.684 mi E
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110055841184
EPA Identifier	110055841184
Primary Name	DOLLAR TREE #03621
Address	1486 E 2ND ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	452990
SIC Codes	5331
SIC Descriptions	VARIETY STORES
Programs	CA-CERS:10397929, CA-ENVIROVIEW:112117, RCRAINFO:CAL000380711
Program Interests	STATE MASTER, TRANSPORTER
Updated On	10-OCT-2015 08:51:54
Recorded On	15-SEP-2013 13:24:14
NAICS Descriptions	ALL OTHER GENERAL MERCHANDISE STORES.

18

Coordinates	33.92911, -116.97884
Distance to site	3734 ft / 0.707 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065399802
EPA Identifier	110065399802
Primary Name	DICK'S ALL AUTO REPAIR
Address	275 E 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	811111
Programs	CA-ENVIROVIEW:25212, RCRAINFO:CAL000294605
Program Interests	STATE MASTER, TRANSPORTER
Recorded On	13-OCT-2015 08:19:12
NAICS Descriptions	GENERAL AUTOMOTIVE REPAIR.

19

Coordinates	33.92478, -116.97811
Distance to site	3831 ft / 0.726 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002877343
EPA Identifier	110002877343
Primary Name	INTERSTATE STRIPING INC
Address	320 EAST 3RD ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
Programs	RCRAINFO:CAD983637968
Program Interests	SQG
Updated On	26-JAN-2012 13:04:23
Recorded On	01-MAR-2000 00:00:00

20

Coordinates	33.92251, -116.95642
Distance to site	3855 ft / 0.730 mi SE
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065912105
EPA Identifier	110065912105
Primary Name	KOHL'S DEPARTMENT STORES - STORE #1186
Address	1479 E 2ND ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	452111
SIC Codes	5311
SIC Descriptions	DEPARTMENT STORES
Programs	CA-ENVIROVIEW:275910, RCRAINFO:CAL000356248
Program Interests	STATE MASTER, TRANSPORTER
Recorded On	13-OCT-2015 16:20:44
NAICS Descriptions	DEPARTMENT STORES (EXCEPT DISCOUNT DEPARTMENT STORES).

21

Coordinates	33.92328, -116.95557
Distance to site	3905 ft / 0.740 mi SE
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110031372486
EPA Identifier	110031372486
Primary Name	HOME DEPOT NO HD8987
Address	1480 E 2ND ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	444110
SIC Codes	5211
SIC Descriptions	LUMBER AND OTHER BUILDING MATERIALS DEALERS
Programs	CA-CERS:10140389, CA-ENVIROVIEW:75114, RCRAINFO:CAR000174722, RCRAINFO:CAR000175208
Program Interests	SQG, STATE MASTER, UNSPECIFIED UNIVERSE
Updated On	14-OCT-2015 11:08:46
Recorded On	22-OCT-2007 16:42:22
NAICS Descriptions	HOME CENTERS.

22

Coordinates	33.93732, -116.97719
Distance to site	4443 ft / 0.842 mi NW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002749189
EPA Identifier	110002749189
Primary Name	CIRCLE K STORE #334
Address	1111 N BEAUMONT AVE
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
Programs	RCRAINFO:CAD981680168
Program Interests	UNSPECIFIED UNIVERSE
Updated On	29-DEC-2014 08:57:32
Recorded On	01-MAR-2000 00:00:00

23

Coordinates	33.929425, -116.981361
Distance to site	4500 ft / 0.852 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002734382
EPA Identifier	110002734382
Primary Name	LAS MANCHAS
Address	105 E 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
Programs	RCRAINFO:CAD981638570
Program Interests	SQG
Updated On	06-AUG-2010 18:08:18
Recorded On	01-MAR-2000 00:00:00

24

Coordinates	33.921687, -116.979219
Distance to site	4677 ft / 0.886 mi SW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002700676
EPA Identifier	110002700676
Primary Name	SO CALIF GAS CO/BEAUMONT BASE
Address	251 E FIRST ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223-2903
SIC Codes	4923
SIC Descriptions	NATURAL GAS TRANSMISSION AND DISTRIBUTION
Programs	CA-CERS:10151371, CA-ENVIROVIEW:69687, HWTS-DATAMART:CAD981422629, RCRAINFO:CAD981422629
Program Interests	SQG, STATE MASTER
Updated On	10-OCT-2015 09:22:18
Recorded On	01-MAR-2000 00:00:00

25

Coordinates	33.92426, -116.98131
Distance to site	4800 ft / 0.909 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002936280
EPA Identifier	110002936280
Primary Name	BALDI BROS CONSTRUCTORS
Address	201 CALIFORNIA AVE
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223-2827
Programs	CA-ENVIROVIEW:10801, HWTS-DATAMART:CAR000072017, RCRAINFO:CAR000072017
Program Interests	SQG, STATE MASTER
Updated On	13-OCT-2015 14:51:14
Recorded On	01-MAR-2000 00:00:00

26

Coordinates	33.92888, -116.98257
Distance to site	4863 ft / 0.921 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110041651110
EPA Identifier	110041651110
Primary Name	PRECISION STAMPINGS, INC.
Address	246 WEST 5TH STREET
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	335931
SIC Codes	3643
SIC Descriptions	CURRENT-CARRYING WIRING DEVICES
Programs	BR:CAL000312071, BR:CAR000211607, CA-CERS:10438120, CA-ENVIROVIEW:58563, RCRAINFO:CAL000312071, RCRAINFO:CAR000211607
Program Interests	HAZARDOUS WASTE BIENNIAL REPORTER, LQG, STATE MASTER
Updated On	26-OCT-2016 13:42:16
Recorded On	02-AUG-2010 15:00:28
NAICS Descriptions	CURRENT-CARRYING WIRING DEVICE MANUFACTURING.

27

Coordinates	33.92904, -116.98288
Distance to site	4957 ft / 0.939 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002651620
EPA Identifier	110002651620
Primary Name	PRECISION STAMPINGS INC
Address	252 W 5TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	333514, 335931
Programs	RCRAINFO:CAD058233750
Program Interests	SQG
Updated On	08-AUG-2010 18:10:16
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	CURRENT-CARRYING WIRING DEVICE MANUFACTURING., SPECIAL DIE AND TOOL, DIE SET, JIG, AND FIXTURE MANUFACTURING.

28

Coordinates	33.92959, -116.98289
Distance to site	4965 ft / 0.940 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110012198246
EPA Identifier	110012198246
Primary Name	PRECISION STAMPINGS INC
Address	500 EGAN AVE
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	335931
SIC Codes	3643
SIC Descriptions	CURRENT-CARRYING WIRING DEVICES
Programs	CA-CERS:10320232, CA-ENVIROVIEW:144738, HWTS-DATAMART:CAR000091645, ICIS:1800059806, NPDES:CAZ461354, RCRAINFO:CAR000091645, TRIS:92223PRCSN5EGAN
Program Interests	ENFORCEMENT/COMPLIANCE ACTIVITY, FORMAL ENFORCEMENT ACTION, ICIS-NPDES NON-MAJOR, SQG, STATE MASTER, STORM WATER INDUSTRIAL, TRI REPORTER
Updated On	28-MAR-2016 17:06:11
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	CURRENT-CARRYING WIRING DEVICE MANUFACTURING.

29

Coordinates	33.92312, -116.95161
Distance to site	4987 ft / 0.945 mi E
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110041653074
EPA Identifier	110041653074
Primary Name	WALMART SUPERCENTER NO 5156
Address	1540 E 2ND ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	452910
Programs	RCRAINFO:CAR000206300
Program Interests	SQG
Updated On	28-MAR-2014 21:18:58
Recorded On	02-AUG-2010 15:17:26
NAICS Descriptions	WAREHOUSE CLUBS AND SUPERCENTERS.

30

Coordinates	33.92234, -116.98131
Distance to site	5093 ft / 0.965 mi SW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110009532728
EPA Identifier	110009532728
Primary Name	HY LITE PRODUCTS INC
Address	101 CALIFORNIA AVENUE
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223-2823
Programs	CA-ENVIROVIEW:180085, HWTS-DATAMART:CAD115061665, RCRAINFO:CAD115061665
Program Interests	SQG, STATE MASTER
Updated On	10-OCT-2015 08:03:40
Recorded On	01-MAR-2000 00:00:00

31

Coordinates	33.928101, -116.983311
Distance to site	5097 ft / 0.965 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110055672268
EPA Identifier	110055672268
Primary Name	ROBERTSON'S READY MIX
Address	452 W LUIS ESTRADA RD
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	327320
SIC Codes	0000, 3273
SIC Descriptions	READY-MIXED CONCRETE
Programs	CA-CERS:10316815, CA-ENVIROVIEW:62448, RCRAINFO:CAL000372426, TRIS:9222WRBRTS452WL
Program Interests	STATE MASTER, TRANSPORTER, TRI REPORTER
Updated On	10-JUN-2016 14:17:00
Recorded On	15-SEP-2013 11:16:18
NAICS Descriptions	READY-MIX CONCRETE MANUFACTURING.

32

Coordinates	33.92841, -116.94965
Distance to site	5104 ft / 0.967 mi E
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110055725755
EPA Identifier	110055725755
Primary Name	STATER BRO'S #86
Address	1661 E 6TH ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
SIC Codes	0000, 5411
SIC Descriptions	GROCERY STORES
Programs	CA-CERS:10323238, CA-ENVIROVIEW:71251, RCRAINFO:CAL000334544
Program Interests	STATE MASTER, TRANSPORTER
Updated On	15-OCT-2015 13:37:39
Recorded On	15-SEP-2013 11:55:58

33

Coordinates	33.94116, -116.94973
Distance to site	6748 ft / 1.278 mi NE
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110055523054
EPA Identifier	110055523054
Primary Name	INCOMPLIANCE ENV SVCS INC DBA COMPLIANCE ENV
Address	1643 AMBER LILY DR
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	562112
Programs	RCRAINFO:CAR000240465
Program Interests	TRANSPORTER
Recorded On	30-AUG-2013 19:50:38
NAICS Descriptions	HAZARDOUS WASTE COLLECTION.

US ACRES (Brownfields)

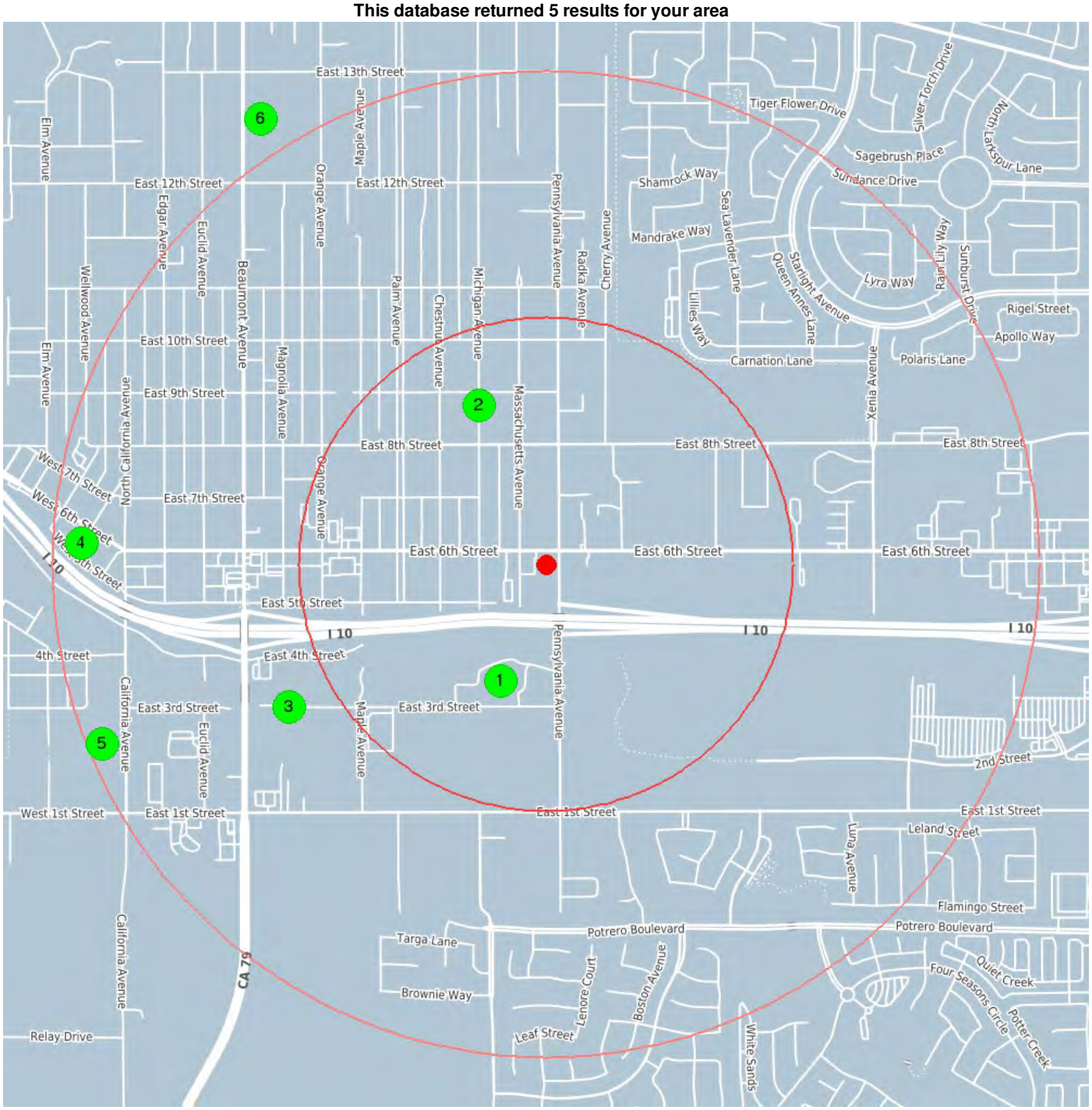
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. The Assessment, Cleanup and Redevelopment Exchange System (ACRES) is an online database for Brownfields Grantees to electronically submit data directly to The United States Environmental Protection Agency (EPA)

This database returned no results for your area

US NPDES

The NPDES module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

This database returned 5 results for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

US NPDES

1

Coordinates	33.92554, -116.9681
Distance to site	1341 ft / 0.254 mi SW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065461912
EPA Identifier	110065461912
Primary Name	PRIORITY PALLET INC
Address	1060 E 3RD ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	321920
SIC Codes	2448
SIC Descriptions	WOOD PALLETS AND SKIDS
Programs	CA-ENVIROVIEW:181206, NPDES:CAZ353624, OSHA-OIS:307454892, OSHA-OIS:316213438, OSHA-OIS:341472694, OSHA-OIS:341763506, RCRAINFO:CAL000376441
Program Interests	ICIS-NPDES NON-MAJOR, OSHA ESTABLISHMENT, STATE MASTER, STORM WATER INDUSTRIAL, TRANSPORTER
Recorded On	13-OCT-2015 09:53:32
NAICS Descriptions	WOOD CONTAINER AND PALLET MANUFACTURING.

2

Coordinates	33.93364, -116.968865
Distance to site	1847 ft / 0.350 mi NW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110045463020
EPA Identifier	110045463020
Primary Name	CARBONLITE INDUSTRIES LLC
Address	875 MICHIGAN AVE
City	RIVERSIDE
County	RIVERSIDE
State	CA
Zipcode	92507
NAICS Codes	326199
Programs	CA-ENVIROVIEW:186235, ICIS:3000004515, NPDES:CAZ419147, OSHA-OIS:341440287, RCRAINFO:CAL000367053
Program Interests	ENFORCEMENT/COMPLIANCE ACTIVITY, ICIS-NPDES NON-MAJOR, OSHA ESTABLISHMENT, STATE MASTER, STORM WATER INDUSTRIAL, TRANSPORTER
Updated On	15-OCT-2015 07:39:34
Recorded On	09-MAY-2012 16:05:11
NAICS Descriptions	ALL OTHER PLASTICS PRODUCT MANUFACTURING.

3

Coordinates	33.92479, -116.97556
Distance to site	3137 ft / 0.594 mi SW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002938126
EPA Identifier	110002938126
Primary Name	DURA PLASTIC PRODUCTS INC
Address	533 E THIRD ST
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223-2797
NAICS Codes	326122
SIC Codes	3089
SIC Descriptions	PLASTICS PRODUCTS, NOT ELSEWHERE CLASSIFIED
Programs	CA-ENVIROVIEW:112969, HWTS-DATAMART:CAR000075010, NPDES:CAZ210918, OSHA-OIS:316210707, RCRAINFO:CAR000075010
Program Interests	ICIS-NPDES NON-MAJOR, OSHA ESTABLISHMENT, SQG, STATE MASTER, STORM WATER INDUSTRIAL
Updated On	10-OCT-2015 08:45:05
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	PLASTICS PIPE AND PIPE FITTING MANUFACTURING.

4

Coordinates	33.92959, -116.98289
Distance to site	4965 ft / 0.940 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110012198246
EPA Identifier	110012198246
Primary Name	PRECISION STAMPINGS INC
Address	500 EGAN AVE
City	BEAUMONT
County	RIVERSIDE
State	CA
Zipcode	92223
NAICS Codes	335931
SIC Codes	3643
SIC Descriptions	CURRENT-CARRYING WIRING DEVICES
Programs	CA-CERS:10320232, CA-ENVIROVIEW:144738, HWTS-DATAMART:CAR000091645, ICIS:1800059806, NPDES:CAZ461354, RCRAINFO:CAR000091645, TRIS:92223PRCSN5EGAN
Program Interests	ENFORCEMENT/COMPLIANCE ACTIVITY, FORMAL ENFORCEMENT ACTION, ICIS-NPDES NON-MAJOR, SQG, STATE MASTER, STORM WATER INDUSTRIAL, TRI REPORTER
Updated On	28-MAR-2016 17:06:11
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	CURRENT-CARRYING WIRING DEVICE MANUFACTURING.

5

Coordinates	33.9237, -116.98217
Distance to site	5117 ft / 0.969 mi W
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110070090237
EPA Identifier	110070090237
Primary Name	BALDI BROTHERS
Address	201 CALIFORNIA AVE
City	BEAUMONT
County	RIVERSIDE COUNTY
State	CA
Zipcode	92223
Programs	NPDES:CAZ313283
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER INDUSTRIAL
Recorded On	07-AUG-2017 10:27:24

6

Coordinates	33.942053, -116.976572
Distance to site	5663 ft / 1.073 mi NW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110070092840
EPA Identifier	110070092840
Primary Name	CROSSROADS MINISTERIES
Address	1252 BEAUMONT AVE
City	BEAUMONT
County	RIVERSIDE COUNTY
State	CA
Zipcode	92223
Programs	NPDES:CAZ440369
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION
Recorded On	07-AUG-2017 10:53:16

US Air Facility System (AIRS / AFS)

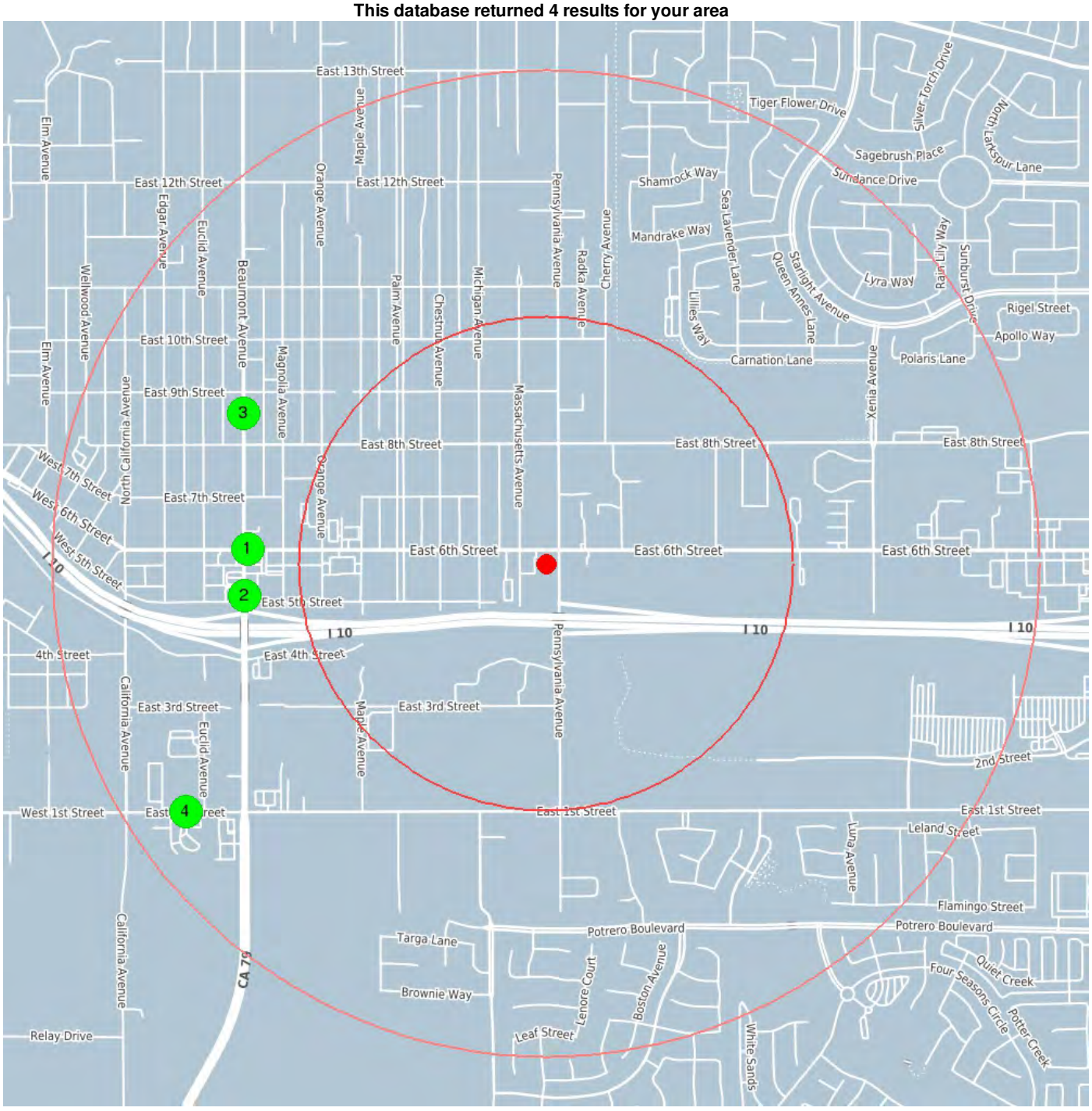
The Air Facility System (AIRS / AFS) contains compliance and permit data for stationary sources of air pollution (such as electric power plants, steel mills, factories, and universities) regulated by EPA, state and local air pollution agencies. The information in AFS is used by the states to prepare State Implementation Plans (SIPs) and to track the compliance status of point sources with various regulatory programs under Clean Air Act.

This database returned no results for your area

CA Registered Underground Storage Tanks

Underground storage tanks containing hazardous or petroleum substances are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The State Water Resources Control Board"s GeoTracker database provides the list of permitted Underground Storage Tanks (UST).

This database returned 4 results for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

1	**Coordinates**	33.92941, -116.97705
	Distance to site	3196 ft / 0.605 mi W

Site Name	PRESTIGE STATIONS, INC. #9719/ARCO #9719
Permitting Agency	RIVERSIDE COUNTY
Address	401 E 6TH ST
City	Beaumont
Zip	92223
County	Riverside

2

Coordinates	33.92804, -116.97715
Distance to site	3240 ft / 0.614 mi W
Site Name	BEAUMONT 76 #5546
Permitting Agency	RIVERSIDE COUNTY
Address	502 BEAUMONT AVE
City	Beaumont
Zip	92223
County	Riverside

3

Coordinates	33.93337, -116.97719
Distance to site	3611 ft / 0.684 mi W
Site Name	GTE CALIFORNIA BEAUMONT CENTRAL OFFICE
Permitting Agency	RIVERSIDE COUNTY
Address	861 BEAUMONT AVE
City	Beaumont
Zip	92223
County	Riverside

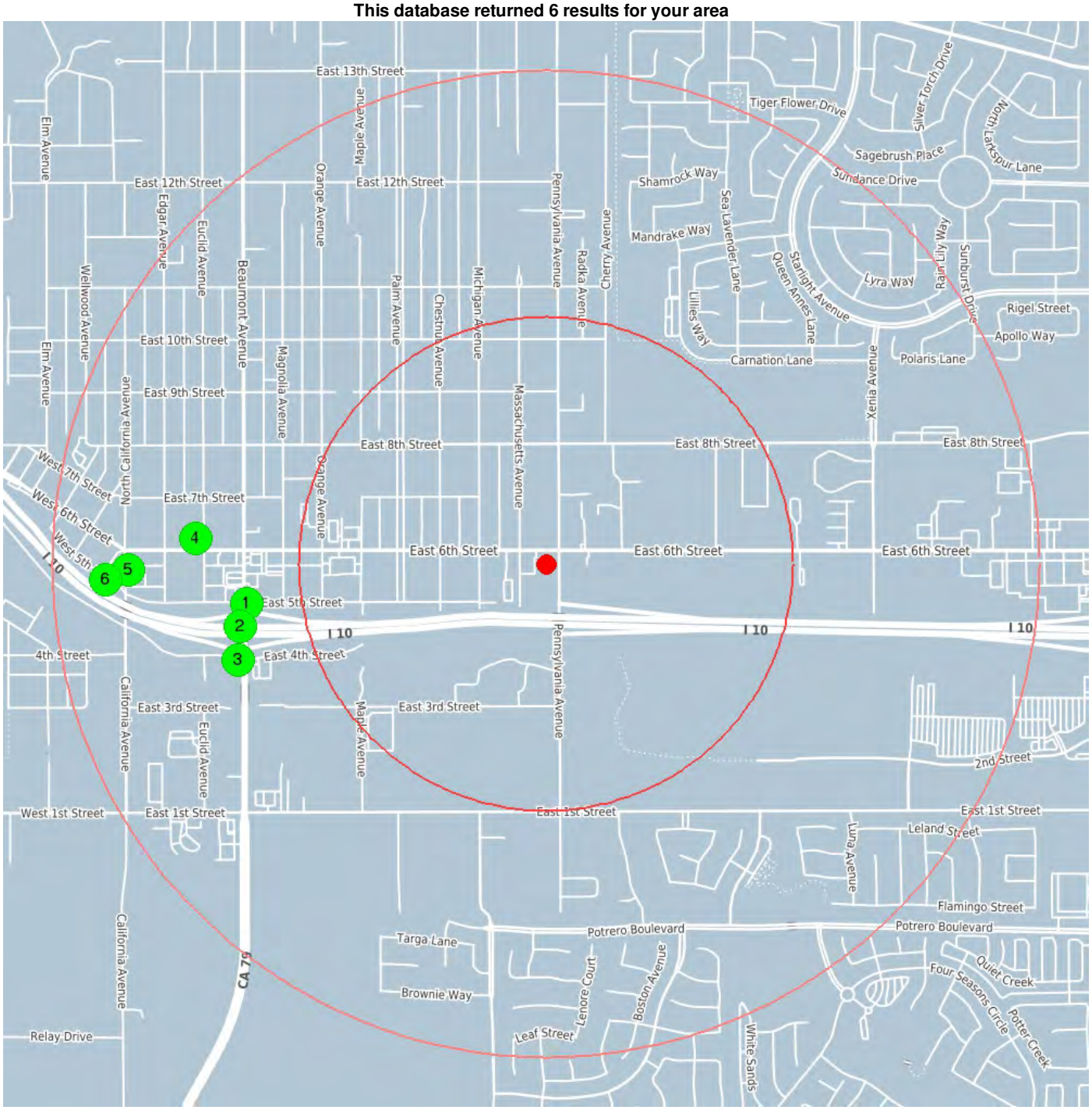
4

Coordinates	33.92168, -116.97923
Distance to site	4681 ft / 0.887 mi SW
Site Name	SOUTHERN CALIFORNIA GAS COMPANY
Permitting Agency	RIVERSIDE COUNTY
Address	251 E 1ST ST
City	Beaumont
Zip	92223
County	Riverside

CA Leaking Underground Storage Tanks

Information on Leaking underground storage tanks containing hazardous or petroleum substances is maintained in the State Water Resources Control Board"s GeoTracker database.

This database returned 6 results for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

CA Leaking Underground Storage Tanks

1

Coordinates	33.9277993, -116.9770751
Distance to site	3228 ft / 0.612 mi W
Site Name	UNOCAL #5546
Site Street Number	502
Site Street Name	BEAUMONT AVE
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Completed - Case Closed
Status Date	1991-01-03
Lead Agency	RIVERSIDE COUNTY LOP
Local Agency	RIVERSIDE COUNTY LOP
File Location	Local Agency Warehouse
Contaminant	Gasoline
Contaminated Medium	Soil

2

Coordinates	33.9273143, -116.9770571
Distance to site	3251 ft / 0.616 mi W
Site Name	Cal Trans
Site Street Name	Beaumont Ave & I-10
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Completed - Case Closed
Status Date	1991-01-18
Lead Agency	RIVERSIDE COUNTY LOP
Local Agency	RIVERSIDE COUNTY LOP
File Location	Local Agency Warehouse
Contaminant	Gasoline
Contaminated Medium	Soil

3

Coordinates	33.92614747, -116.9773877
Distance to site	3452 ft / 0.654 mi W
Site Name	SOCO
Site Street Number	373
Site Street Name	BEAUMONT AVE
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Open - Remediation
Status Date	1995-08-01
Lead Agency	RIVERSIDE COUNTY LOP
Local Agency	RIVERSIDE COUNTY LOP
File Location	Local Agency
Contaminant	Gasoline
Contaminated Medium	Aquifer used for drinking water supply

4

Coordinates	33.92971365, -116.97887
Distance to site	3753 ft / 0.711 mi W
Site Name	BEAUMONT MARKET
Site Street Number	296
Site Street Name	E 6TH ST
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Open - Remediation
Status Date	2008-05-06
Lead Agency	RIVERSIDE COUNTY LOP
Local Agency	RIVERSIDE COUNTY LOP
File Location	Local Agency
Contaminant	Gasoline
Contaminated Medium	Soil

5

Coordinates	33.9288013, -116.9812463
Distance to site	4463 ft / 0.845 mi W
Site Name	BEAUMONT MAINTENANCE YARD
Site Street Number	550
Site Street Name	CALIFORNIA AVE
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Completed - Case Closed
Status Date	1988-07-11
Lead Agency	SANTA ANA RWQCB (REGION 8)
Local Agency	RIVERSIDE COUNTY LOP
Contaminant	Gasoline
Contaminated Medium	Soil

6

Coordinates	33.9285093, -116.9820523
Distance to site	4709 ft / 0.892 mi W
Site Name	BEAUMONT POLICE DEPARTMENT
Site Street Number	500
Site Street Name	GRACE AVE
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Completed - Case Closed
Status Date	1987-01-26
Lead Agency	SANTA ANA RWQCB (REGION 8)
Local Agency	RIVERSIDE COUNTY LOP
Contaminant	Gasoline
Contaminated Medium	Soil

CA CERCLIS Equivalent

The Department of Toxic Substances Controls (DTSC) Site Mitigation and Brownfields Reuse Program (SMBRP) EnviroStor database identifies CERCLIS equivalent sites as "State Response". These are sites known or suspected to contain uncontrolled or abandoned hazardous substance facilities.

This database returned no results for your area

CA NPL Equivalent

The Department of Toxic Substances Controls (DTSC) Site Mitigation and Brownfields Reuse Program (SMBRP) EnviroStor database identifies sites on the National Priority List (NPL). This is the equivalent of the Federal NPL identifying facilities and study areas with known contamination that are given priority for remedial action.

This database returned no results for your area

CA Hazardous Waste Sites

The Department of Toxic Substances Controls (DTSC) Site Mitigation and Brownfields Reuse Program (SMBRP) EnviroStor database identifies Hazardous Waste Sites. These include...

All hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.

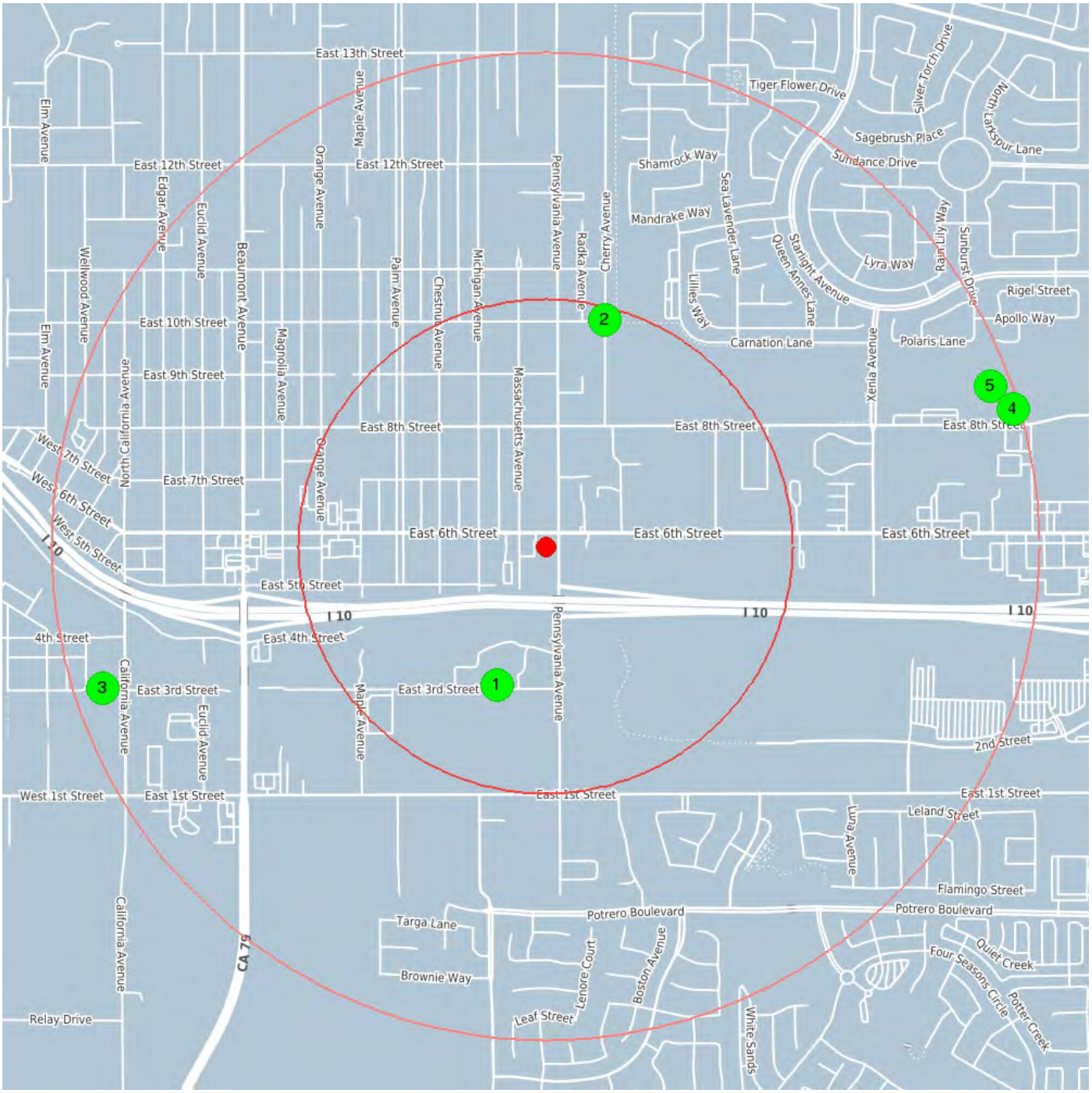
All land designated as hazardous waste property or border zone property pursuant to Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the Health and Safety Code.

All information received by the Department of Toxic Substances Control pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposals on public land.

All sites listed pursuant to Section 25356 of the Health and Safety Code.

All sites included in the Abandoned Site Assessment Program.

This database returned 5 results for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

1	**Coordinates**	33.924922, -116.968228
	Distance to site	1566 ft / 0.297 mi SW

Site Name	SQUARE D COMPANY
Site Type	Corrective Action
Site Type 2	Corrective Action
Project Manager	KATHY SAN MIGUEL
Project Supervisor	Ju-Tseng Liu
Envirostor ID	80001405
Status	Active
Status Date	2008-01-01 00:00:00
Past Uses	NONE SPECIFIED
Contaminant	NONE SPECIFIED
Address	1060 E 3RD ST
City	BEAUMONT
State	CA
Zip Code	922233020
County	RIVERSIDE

2

Coordinates	33.9356, -116.9644
Distance to site	2501 ft / 0.474 mi N
Site Name	DEUTCH ELEMENTARY SCHOOL NO. 2
Site Type	School Investigation
Site Type 2	School
Site Area (acres)	12
Project Supervisor	Javier Hinojosa
Envirostor ID	33010033
Status	No Further Action
Status Date	2001-12-18 00:00:00
Past Uses	AGRICULTURAL - ROW CROPS
Contaminant	NONE SPECIFIED
Funding Source	School District
Address	Cherry Avenue/10th Street
City	Beaumont
State	CA
Zip Code	92223
County	RIVERSIDE

3

Coordinates	33.9248265060241, -116.98215
Distance to site	4971 ft / 0.942 mi W
Site Name	LOMA LINDA UNIVERSITY PROPERTY
Site Type	Evaluation
Site Type 2	Evaluation
Site Area (acres)	20
Project Manager	JOSEPH CULLY
Project Supervisor	Greg Holmes
Envirostor ID	33990002
Status	Refer: EPA
Status Date	2007-02-27 00:00:00
Past Uses	NONE SPECIFIED
Contaminant	NONE SPECIFIED
Funding Source	Responsible Party
Address	NE CORNER OF 3RD ST. AND PENNSYLVANIA AV
City	BEAMOUNT
State	CA
Zip Code	92223
County	RIVERSIDE

4

Coordinates	33.933, -116.95
Distance to site	5206 ft / 0.986 mi E
Site Name	SUNDANCE ELEMENTARY SCHOOL
Site Type	School Investigation
Site Type 2	School
Site Area (acres)	12
Project Supervisor	* Rafat Abbasi
Envirostor ID	33010093
Status	No Further Action
Status Date	2004-08-05 00:00:00
Past Uses	AGRICULTURAL - ROW CROPS
Contaminant	SOIL
Funding Source	School District
Address	8th Street/Xena Avenue
City	Beaumont
State	CA
Zip Code	92223
County	RIVERSIDE

5

Coordinates	33.933, -116.95
Distance to site	5206 ft / 0.986 mi E

Site Name	DEUTCH ELEMENTARY SCHOOL NO. 1
Site Type	School Investigation
Site Type 2	School
Site Area (acres)	12.5
Project Supervisor	Javier Hinojosa
Envirostor ID	33010032
Status	No Further Action
Status Date	2001-12-18 00:00:00
Past Uses	AGRICULTURAL - ROW CROPS
Contaminant	SOIL
Funding Source	School District
Address	8th/Allegheny
City	Beaumont
State	CA
Zip Code	92223
County	RIVERSIDE

CA Activity Use Restrictions

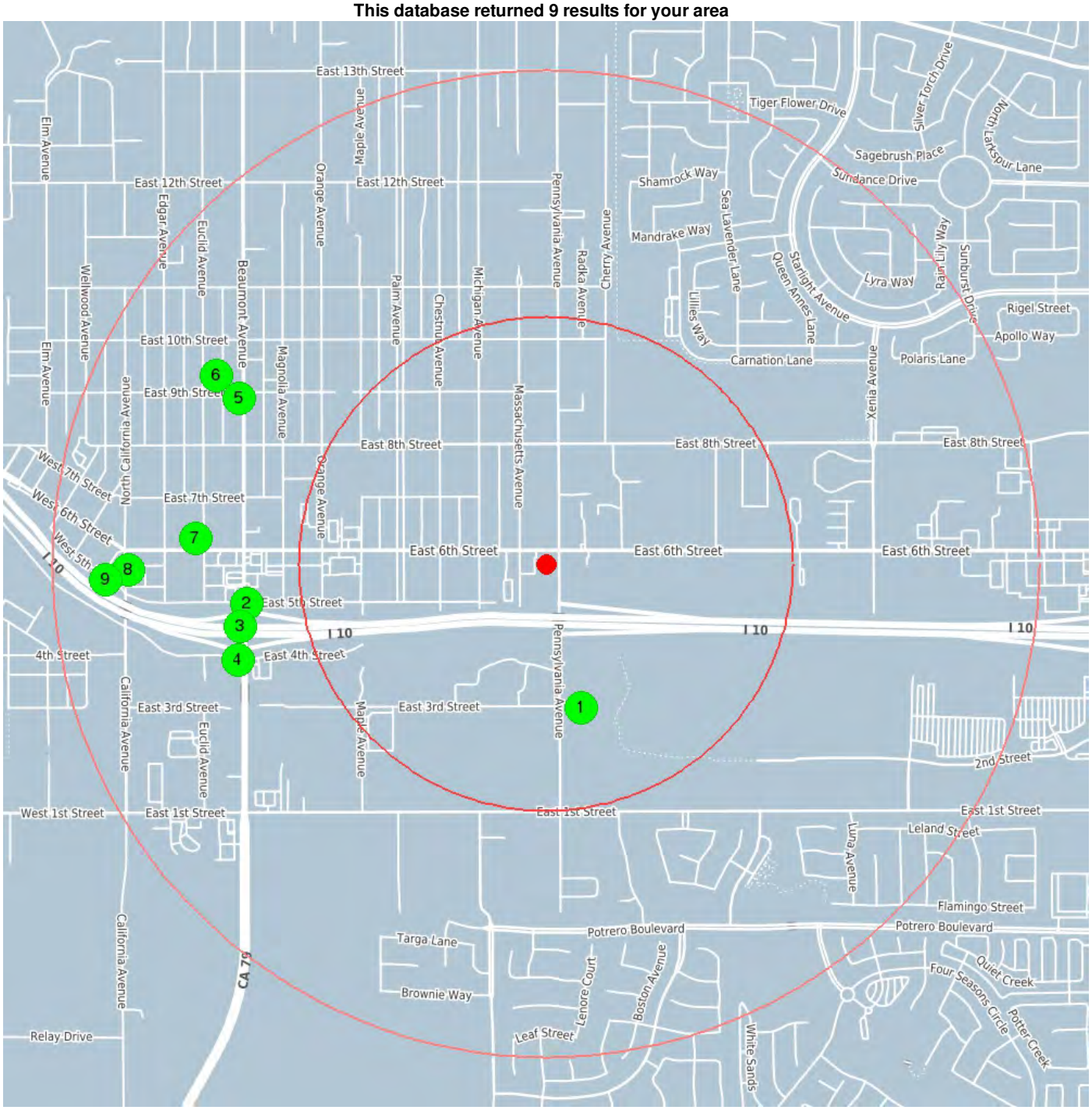
Activity and Use Limitations (AULs), also known as Environmental Land-Use Controls (LUCs) â€“ An AUL is a restriction, covenant or notice concerning the use of real property, which is imposed on real property. AULs and LUCs are further categorized as Institutional Controls (ICs) and Engineering Controls (ECs). An IC is a legal or regulatory restriction on the use of a property, limiting the use of groundwater and excavations or preventing such businesses as day care centers or schools on the property. An EC involves physical means of restricting site access or use in order to prevent the spreading or exposure of a contaminant. Frequently implemented engineering controls include requiring black top on the surface, building of structures to prevent exposure or even notices to the public that are posted on the grounds warning of contaminants.

This database returned no results for your area

CA Spills, Leaks, Investigations, and Cleanups

The Spills, Leaks, Investigation & Cleanup (SLIC) Program is responsible for site investigation and corrective action involving sites not overseen by the Underground Tank Program and the Well Investigation Program. This program is not restricted to particular pollutants or environments; rather, the program covers all types of pollutants (such as solvents, petroleum fuels, and heavy metals) and all environments (including surface and water, groundwater, and the vadose zone). Upon confirming that an unauthorized discharge is polluting or threatens to pollute regional water bodies, the Regional Board oversees site investigation and corrective action. Statutory authority for the program is derived from the California Water Code, Division 7, Section 13304. Guidelines for site investigation and remediation are promulgated in State Board Resolution No. 92-49 entitled Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304.

This database returned 9 results for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

CA Spills, Leaks, Investigations, and Cleanups

1

Coordinates	33.924748, -116.965257
Distance to site	1585 ft / 0.300 mi S
Site Name	YATES INDUSTRIES (SQUARE D CO)
Site Street Number	1060
Site Street Name	3RD STREET E
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Open
Status Date	1965-01-01
Lead Agency	SANTA ANA RWQCB (REGION 8)

2

Coordinates	33.9277993, -116.9770751
Distance to site	3228 ft / 0.612 mi W
Site Name	UNOCAL #5546
Site Street Number	502
Site Street Name	BEAUMONT AVE
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Completed - Case Closed
Status Date	1991-01-03
Lead Agency	RIVERSIDE COUNTY LOP
Local Agency	RIVERSIDE COUNTY LOP
File Location	Local Agency Warehouse
Contaminant	Gasoline
Contaminated Medium	Soil

3

Coordinates	33.9273143, -116.9770571
Distance to site	3251 ft / 0.616 mi W
Site Name	Cal Trans
Site Street Name	Beaumont Ave & I-10
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Completed - Case Closed
Status Date	1991-01-18
Lead Agency	RIVERSIDE COUNTY LOP
Local Agency	RIVERSIDE COUNTY LOP
File Location	Local Agency Warehouse
Contaminant	Gasoline
Contaminated Medium	Soil

4

Coordinates	33.92614747, -116.9773877
Distance to site	3452 ft / 0.654 mi W
Site Name	SOCO
Site Street Number	373
Site Street Name	BEAUMONT AVE
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Open - Remediation
Status Date	1995-08-01
Lead Agency	RIVERSIDE COUNTY LOP
Local Agency	RIVERSIDE COUNTY LOP
File Location	Local Agency
Contaminant	Gasoline
Contaminated Medium	Aquifer used for drinking water supply

5

Coordinates	33.9338223, -116.977345
Distance to site	3729 ft / 0.706 mi NW
Site Name	LOCKHEED PROPULSION CO.
Site Street Number	1000
Site Street Name	POTRERO
Site City	BEAUMONT
Site State	CA
Site County	San Bernardino
Status	Open
Status Date	1965-01-01
Lead Agency	SANTA ANA RWQCB (REGION 8)

6

Coordinates	33.9338223, -116.977345
Distance to site	3729 ft / 0.706 mi NW
Site Name	LOCKHEED PROPULSION CO (J)
Site Street Name	JACK RABBIT ROAD
Site City	BEAUMONT
Site State	CA
Site County	Riverside
Status	Open
Status Date	1965-01-01
Lead Agency	SANTA ANA RWQCB (REGION 8)

7

Coordinates	33.92971365, -116.97887
Distance to site	3753 ft / 0.711 mi W
Site Name	BEAUMONT MARKET
Site Street Number	296
Site Street Name	E 6TH ST
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Open - Remediation
Status Date	2008-05-06
Lead Agency	RIVERSIDE COUNTY LOP
Local Agency	RIVERSIDE COUNTY LOP
File Location	Local Agency
Contaminant	Gasoline
Contaminated Medium	Soil

8

Coordinates	33.9288013, -116.9812463
Distance to site	4463 ft / 0.845 mi W
Site Name	BEAUMONT MAINTENANCE YARD
Site Street Number	550
Site Street Name	CALIFORNIA AVE
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Completed - Case Closed
Status Date	1988-07-11
Lead Agency	SANTA ANA RWQCB (REGION 8)
Local Agency	RIVERSIDE COUNTY LOP
Contaminant	Gasoline
Contaminated Medium	Soil

CA Spills, Leaks, Investigations, and Cleanups

9

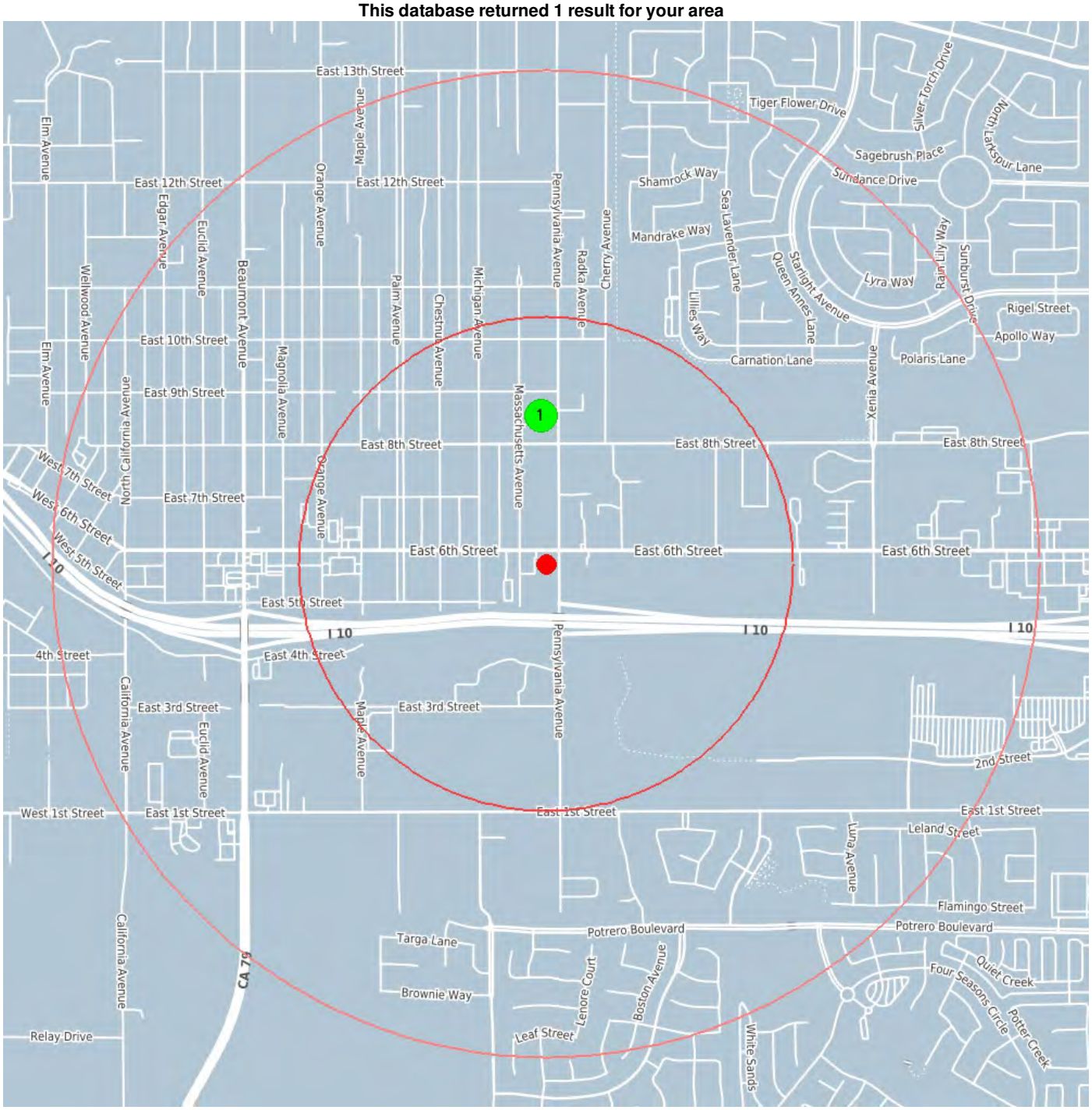
Coordinates	33.9285093, -116.9820523
Distance to site	4709 ft / 0.892 mi W

Site Name	BEAUMONT POLICE DEPARTMENT
Site Street Number	500
Site Street Name	GRACE AVE
Site City	BEAUMONT
Site State	CA
Site Zip	92223
Site County	Riverside
Status	Completed - Case Closed
Status Date	1987-01-26
Lead Agency	SANTA ANA RWQCB (REGION 8)
Local Agency	RIVERSIDE COUNTY LOP
Contaminant	Gasoline
Contaminated Medium	Soil

CA Solid Waste Landfills

The Solid Waste Landfill List (SWLF) database is provided by the California Solid Waste Information System (SWIS) and consists of both open as well as closed inactive solid waste disposal facilities and transfer stations pursuant to the Solid Waste Management and Resource Recovery Act of 1972.

This database returned 1 result for your area



center 33.928969108164 -116.96650154169 0.5 mile 1.0 mile

1	**Coordinates**	33.93333, -116.96667
	Distance to site	1591 ft / 0.301 mi N

Site Name	Ce-Cert Msw Compost Project
County	Riverside
Address	16411 Lamb Canyon Rd.
City	Beaumont
Operator	Ce-Cert

CA Oil and Gas Wells

The California Department of Conservation, Division of Oil, Gas and Thermal Resources (DOGGR) was created to serve the needs of the state, local governments, and industry by regulating statewide oil and gas activities with uniform laws and regulations. The DOGGR supervises the drilling, operation, maintenance, and plugging and abandonment of onshore and offshore oil, gas, and geothermal wells, preventing damage to: (1) life, health, property, and natural resources; (2) underground and surface waters suitable for irrigation or domestic use; and (3) oil, gas and geothermal reservoirs.

This database returned no results for your area

CA Voluntary Cleanup Sites

The Department of Toxic Substances Controls (DTSC) Site Mitigation and Brownfields Reuse Program (SMBRP) EnviroStor database identifies Voluntary Cleanup sites. These sites include low threat level properties with confirmed or unconfirmed releases. The responsible parties have requested that DTSC oversee investigation and/or cleanup activities and agreed to offset DTSC expenses.

This database returned no results for your area

APPENDIX G
HYDROLOGY/HYDRAULICS STUDY
MAY 4, 2020
PRELIMINARY WQMP
AUGUST 25, 2020

HYDROLOGY/HYDRAULICS STUDY
FOR
BEYOND FOOD BEAUMONT (SITE #1148)

Prepared By: Love Engineering
31915 Rancho California Road
Suite 200-166
Temecula, CA 92591
(951) 440-8149

Thomas S. Love

Thomas S. Love

May 4, 2020

SECTION 1 – PURPOSE/METHODOLOGY/RESULTS

Vicinity Map
Project Summary
Purpose
Methodology
Assumptions
Results
Storm Data
Soils Data

SECTION 2 – EXISTING CONDITION HYDROLOGY

Existing Condition Unit Hydrograph Method

2 Year – 24 Hour Storm

10 Year - 3 Hour, 6 Hour, 24 Hour Storm

100 Year - 3 Hour, 6 Hour, 24 Hour Storm

SECTION 3 – DEVELOPED CONDITION HYDROLOGY

Developed Condition Unit Hydrograph Method

2 Year – 24 Hour Storm

10 Year - 3 Hour, 6 Hour, 24 Hour Storm

100 Year - 3 Hour, 6 Hour, 24 Hour Storm

SECTION 4 – RATIONAL METHOD

100 Year Storm (Existing Condition)

100 Year Storm (Developed Condition)

SECTION 5 – HYDRAULIC CALCULATIONS

Area 1/Area 2/Area 3 (12” PVC)

Area 2 (8” PVC)

Area 3 (8” PVC)

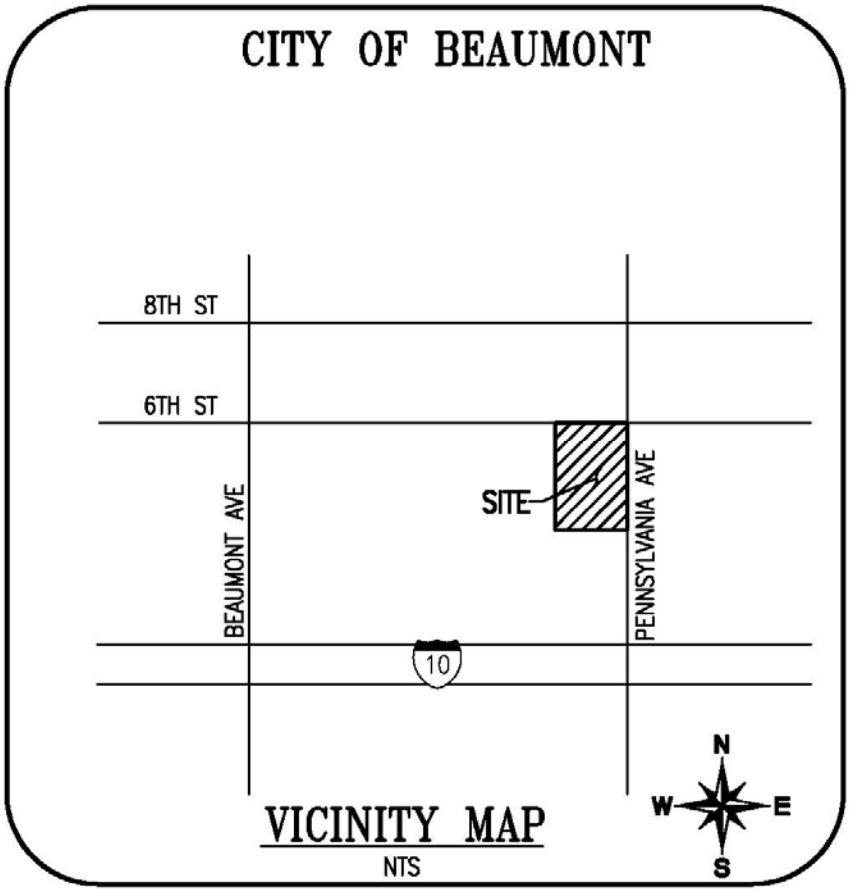
SECTION 6 – MAPS

Hydrology Map - Existing Condition

Hydrology Map - Developed Condition

Hydrology Map – Developed Condition (Rational Method)

SECTION 1 – PURPOSE/METHODOLOGY/RESULTS



PROJECT SUMMARY

The project proposes to construct a gas station with a convenience store and carwash on a 1.01 acre site located on the southwest corner of the intersection of 6th Street and Pennsylvania Avenue in the City of Beaumont. The site also contains a ±28,110 SF access/parking area and two bioretention basins on the southern boundary and western boundary of the property. There is an existing 42" storm drain in Pennsylvania Avenue that the basin outlets will tie into.

PURPOSE

The purpose of this study is to analyze the 10 year and 100 year, 3 hour, 6 hour, and 24 hour storm flows for the site in the existing condition and developed condition to determine the necessary detention volume to mitigate storm flows due to development. The 2 year, 24 hour storm is also analyzed for hydromodification concerns. Finally, the 100 year rational method storm is analyzed to size the storm drain inlets and piping.

METHODOLOGY

The 10 year and 100 year, 3 hour, 6 hour, 24 hour and 2 year, 24 hour storm flows are calculated by using the Unit Hydrograph Method described in the Riverside County Flood Control Hydrology Manual. The rational method is also used for the proposed condition to size the onsite storm drain inlets and system. WSPG software is used to calculate storm drain hydraulics.

ASSUMPTIONS

Storm Event: 2 year/10 year/100 year, 3 hour, 6 hour, 24 hour

Antecedent Moisture Condition: AMC 2

Soil Type: B

Existing Condition Impervious: 18%
Developed Condition Impervious: 78%

Manning "N" Value: 0.025 (Existing Condition)
Manning "N" Value: 0.015 (Developed Condition)

Rainfall Data (PER NOAA ATLAS 14)

Storm Event	3 HR	6 HR	24 HR
2 Year	0.97”	1.40”	2.73”
100 Year	2.54”	3.38”	6.52”

RESULTS (UNIT HYDROGRAPH METHOD)

Storm Event	Existing Condition	Developed Condition	Difference Storm Flow Dev - Ex	Flood Volume Ex	Flood Volume Developed	Difference Flood Volume Dev - Ex
$Q_{10\ Year\ 3\ Hour}$	1.4 CFS	1.4 CFS	0 CFS	4,321 CF	4,289 CF	-32 CF
$Q_{10\ Year\ 6\ Hour}$	1.3 CFS	1.3 CFS	0 CFS	4,952 CF	4,923 CF	-29 CF
$Q_{10\ Year\ 24\ Hour}$	0.5 CFS	0.5 CFS	0 CFS	7,418 CF	9,862 CF	2,444 CF
$Q_{100\ Year\ 3\ Hour}$	2.3 CFS	2.3 CFS	0 CFS	7,694 CF	7,638 CF	-56 CF
$Q_{100\ Year\ 6\ Hour}$	2.0 CFS	2.0 CFS	0 CFS	9,189 CF	9,120 CF	-69 CF
$Q_{100\ Year\ 24\ Hour}$	0.8 CFS	0.8 CFS	0 CFS	13,834 CF	16,173 CF	2,339 CF
$Q_{2\ Year\ 24\ Hour}$	0.3 CFS	0.3 CFS	0 CFS	3,273 CF	5,211 CF	1,938 CF

RESULTS (RATIONAL METHOD)

Storm Event	Existing Condition	Developed Condition	Difference
Q_{100}	2.2 CFS	4.3 CFS	2.1 CFS

The results of the hydrology study show that the flows exiting the site in the developed condition are less than or equal to the flows exiting the site in the existing condition. Although

development often increases stormwater runoff there are factors that can contribute to it actually being reduced. In this case the reduced runoff from the site in the developed condition is mostly controlled by the increase in the length of the path of travel thus yielding a longer time of concentration. However, the storm flow volumes were increased for the 24 hour storms.

Since the developed stormwater runoff is less than or equal to the existing condition runoff, mitigation is not necessary and there will be no downstream impacts. The existing condition storm flows onto the property directly to the south of the site. However, in the developed condition this storm flow will be conveyed via the onsite storm drain system to the existing 42" storm drain in Pennsylvania Avenue. There is no offsite run-on and the site will be protected from the 100 year storm through the onsite area drains and detention basin. The two bioretention basins will still be needed for water quality purposes. The bioretention basins will also mitigate for Hydromodification concerns in relation to the 2 year, 24 hour storm.

The Rational Method developed condition storm flow will be used for sizing the storm drain inlets and pipe. The flows will be distributed to each inlet/pipe system based on a proportion of area to the entire project. See below for results:

Site Area: 44,404 SF/1.01 Acres

Area 1: 13,899 SF (31%)

Area 2: 9,743 SF (22%)

Area 3: 12,917 SF (29%) – Net area less bioretention basins

Area 4: 6,588 SF (15%)

Storm Event	Entire Site	Area 1	Area 2	Area 3	Area 4
Q_{100}	4.3 CFS	1.3 CFS	0.9 CFS	1.2 CFS	0.7 CFS

Storm Drain Inlet Calculations (24"x24" Inlet)

$Q_{inlet} = CA(2gd)^{0.5}$

C=0.65

A = 2'x2' = 4 ft^2

d = 1" = 0.08 ft

$Q_{inlet} = 0.65x4(2x32.2x.08)^{0.5}$

Q_{inlet} = 5.9 CFS

Q_{inlet} = 2.9 CFS (50% clogged) > Q_{max} = 1.3 CFS (Area 1)

***24"x24" Inlets are adequate**

NOAA Atlas 14, Volume 6, Version 2 BEAUMONT
Station ID: 04-0606
Location name: Beaumont, California, USA*
Latitude: 33.9292°, Longitude: -116.975°
Elevation:
Elevation (station metadata): 2613 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.123 (0.103-0.149)	0.162 (0.135-0.197)	0.222 (0.184-0.270)	0.277 (0.228-0.341)	0.365 (0.290-0.464)	0.443 (0.345-0.576)	0.534 (0.405-0.710)	0.639 (0.471-0.876)	0.805 (0.569-1.15)	0.954 (0.651-1.41)
10-min	0.177 (0.147-0.214)	0.233 (0.194-0.282)	0.318 (0.264-0.387)	0.398 (0.327-0.488)	0.523 (0.416-0.665)	0.636 (0.495-0.825)	0.765 (0.581-1.02)	0.916 (0.676-1.25)	1.15 (0.815-1.65)	1.37 (0.932-2.03)
15-min	0.213 (0.178-0.259)	0.281 (0.234-0.341)	0.385 (0.319-0.468)	0.481 (0.396-0.590)	0.633 (0.503-0.804)	0.769 (0.598-0.998)	0.925 (0.702-1.23)	1.11 (0.817-1.52)	1.40 (0.986-1.99)	1.65 (1.13-2.45)
30-min	0.309 (0.257-0.374)	0.407 (0.339-0.494)	0.556 (0.462-0.677)	0.696 (0.572-0.854)	0.916 (0.728-1.16)	1.11 (0.865-1.44)	1.34 (1.01-1.78)	1.60 (1.18-2.19)	2.02 (1.43-2.89)	2.39 (1.63-3.54)
60-min	0.453 (0.377-0.549)	0.596 (0.496-0.724)	0.815 (0.677-0.992)	1.02 (0.839-1.25)	1.34 (1.07-1.71)	1.63 (1.27-2.12)	1.96 (1.49-2.61)	2.35 (1.73-3.22)	2.96 (2.09-4.23)	3.51 (2.39-5.19)
2-hr	0.648 (0.540-0.785)	0.807 (0.672-0.980)	1.05 (0.869-1.27)	1.27 (1.04-1.56)	1.62 (1.28-2.05)	1.92 (1.49-2.49)	2.27 (1.72-3.02)	2.67 (1.97-3.66)	3.30 (2.33-4.72)	3.86 (2.63-5.71)
3-hr	0.792 (0.660-0.960)	0.971 (0.808-1.18)	1.24 (1.03-1.51)	1.48 (1.22-1.82)	1.85 (1.47-2.35)	2.18 (1.70-2.83)	2.54 (1.93-3.39)	2.96 (2.19-4.06)	3.61 (2.55-5.15)	4.17 (2.84-6.17)
6-hr	1.15 (0.961-1.40)	1.40 (1.17-1.70)	1.76 (1.46-2.14)	2.07 (1.71-2.54)	2.54 (2.02-3.23)	2.94 (2.29-3.82)	3.38 (2.57-4.50)	3.87 (2.85-5.30)	4.59 (3.25-6.57)	5.21 (3.56-7.72)
12-hr	1.57 (1.31-1.91)	1.96 (1.63-2.38)	2.48 (2.06-3.02)	2.92 (2.41-3.59)	3.55 (2.82-4.51)	4.05 (3.15-5.26)	4.58 (3.48-6.09)	5.14 (3.79-7.04)	5.93 (4.19-8.48)	6.57 (4.48-9.73)
24-hr	2.11 (1.87-2.43)	2.73 (2.41-3.15)	3.55 (3.13-4.10)	4.21 (3.68-4.91)	5.12 (4.33-6.16)	5.81 (4.82-7.15)	6.52 (5.28-8.21)	7.25 (5.72-9.38)	8.24 (6.24-11.1)	9.01 (6.60-12.6)
2-day	2.56 (2.26-2.95)	3.40 (3.00-3.92)	4.54 (4.00-5.25)	5.50 (4.81-6.41)	6.85 (5.80-8.25)	7.93 (6.58-9.75)	9.05 (7.34-11.4)	10.2 (8.08-13.3)	11.9 (9.03-16.1)	13.3 (9.72-18.5)
3-day	2.78 (2.46-3.20)	3.73 (3.30-4.31)	5.07 (4.47-5.86)	6.23 (5.45-7.26)	7.91 (6.70-9.53)	9.30 (7.72-11.4)	10.8 (8.74-13.6)	12.4 (9.79-16.1)	14.8 (11.2-19.9)	16.7 (12.3-23.3)
4-day	3.02 (2.67-3.48)	4.08 (3.60-4.70)	5.57 (4.91-6.45)	6.87 (6.01-8.02)	8.79 (7.44-10.6)	10.4 (8.61-12.8)	12.1 (9.81-15.2)	14.0 (11.0-18.1)	16.8 (12.7-22.6)	19.1 (14.0-26.6)
7-day	3.50 (3.10-4.04)	4.72 (4.17-5.44)	6.42 (5.66-7.42)	7.89 (6.90-9.20)	10.0 (8.50-12.1)	11.8 (9.79-14.5)	13.7 (11.1-17.2)	15.8 (12.4-20.4)	18.8 (14.2-25.3)	21.3 (15.6-29.6)
10-day	3.85 (3.41-4.44)	5.18 (4.58-5.98)	7.02 (6.19-8.13)	8.61 (7.53-10.0)	10.9 (9.23-13.1)	12.8 (10.6-15.7)	14.8 (12.0-18.6)	16.9 (13.3-21.9)	20.0 (15.2-27.0)	22.6 (16.5-31.4)
20-day	4.82 (4.26-5.55)	6.55 (5.79-7.56)	8.90 (7.84-10.3)	10.9 (9.51-12.7)	13.6 (11.6-16.4)	15.9 (13.2-19.5)	18.2 (14.7-22.9)	20.6 (16.3-26.7)	24.0 (18.2-32.4)	26.8 (19.6-37.3)
30-day	5.67 (5.02-6.53)	7.76 (6.86-8.96)	10.6 (9.31-12.2)	12.9 (11.2-15.0)	16.0 (13.6-19.3)	18.5 (15.4-22.8)	21.1 (17.1-26.5)	23.8 (18.7-30.7)	27.4 (20.8-37.0)	30.3 (22.2-42.3)
45-day	6.84 (6.05-7.88)	9.41 (8.32-10.9)	12.8 (11.2-14.8)	15.5 (13.5-18.0)	19.1 (16.2-23.1)	22.0 (18.2-27.0)	24.8 (20.1-31.2)	27.7 (21.9-35.9)	31.7 (24.0-42.7)	34.7 (25.4-48.4)
60-day	8.00 (7.08-9.22)	11.0 (9.72-12.7)	14.8 (13.1-17.2)	17.9 (15.7-20.9)	22.0 (18.6-26.5)	25.1 (20.8-30.9)	28.2 (22.8-35.5)	31.3 (24.7-40.5)	35.4 (26.8-47.8)	38.6 (28.3-53.8)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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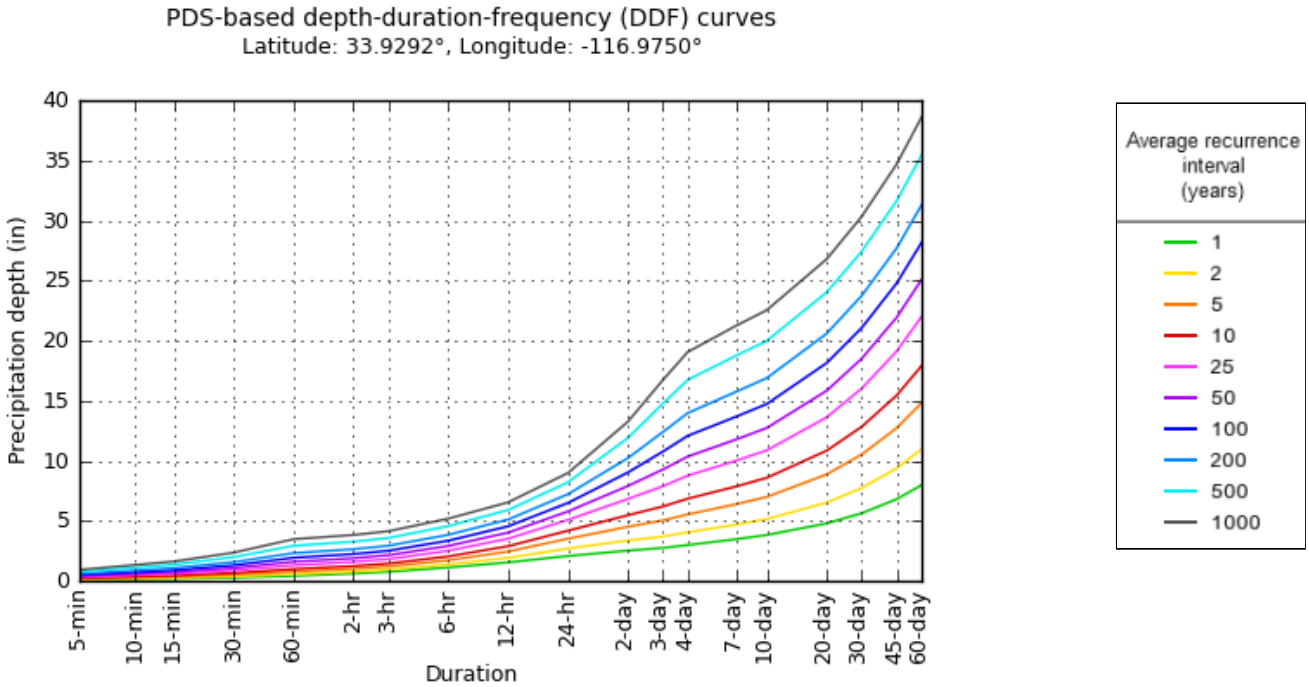
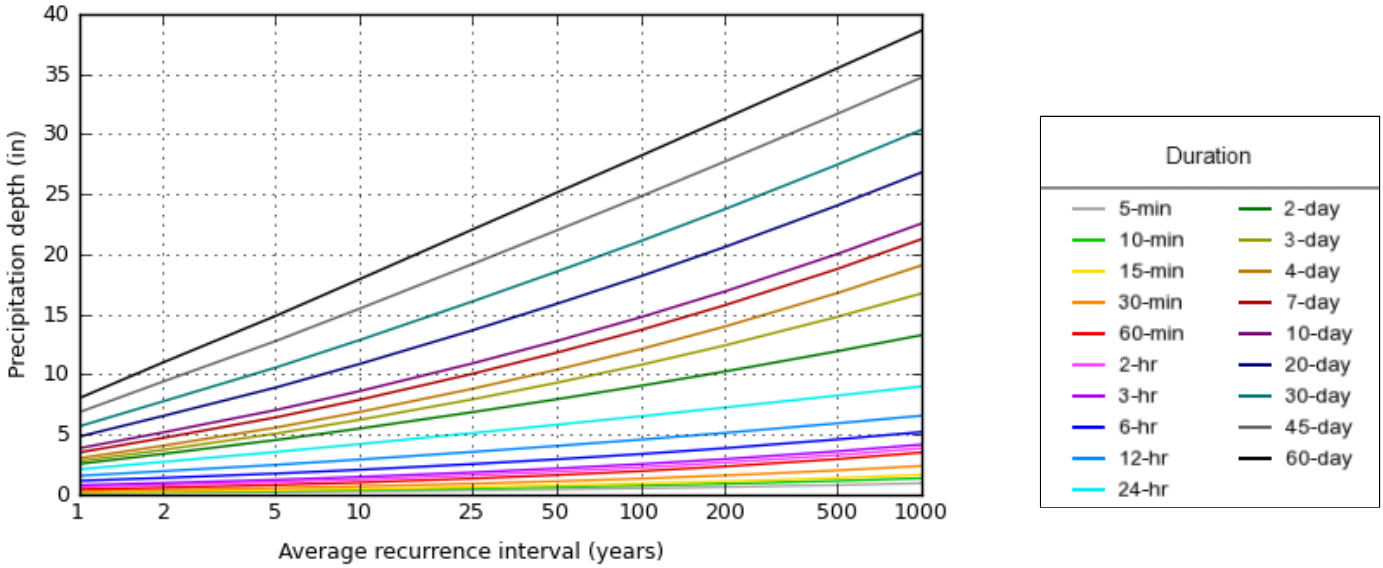
PF graphical





NOAA Atlas 14, Volume 6, Version 2

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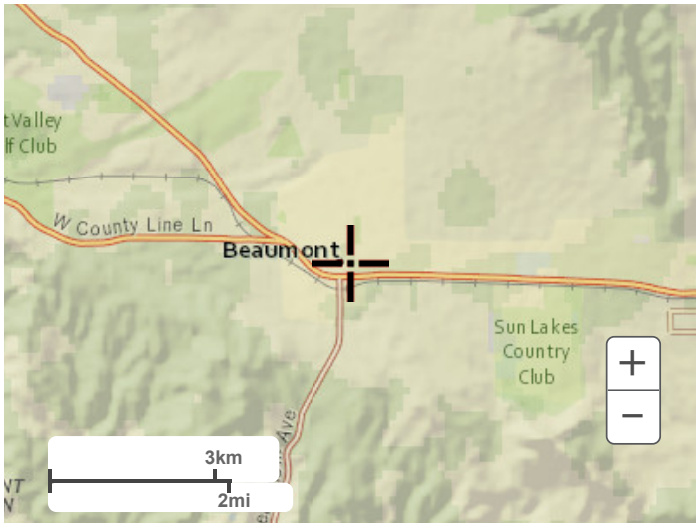
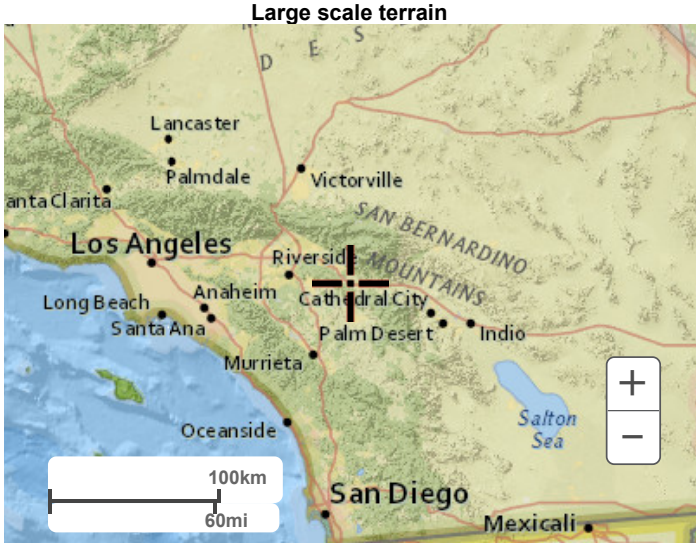
Maps & aerials

Small scale terrain



Large scale terrain



Large scale map

Large scale aerial

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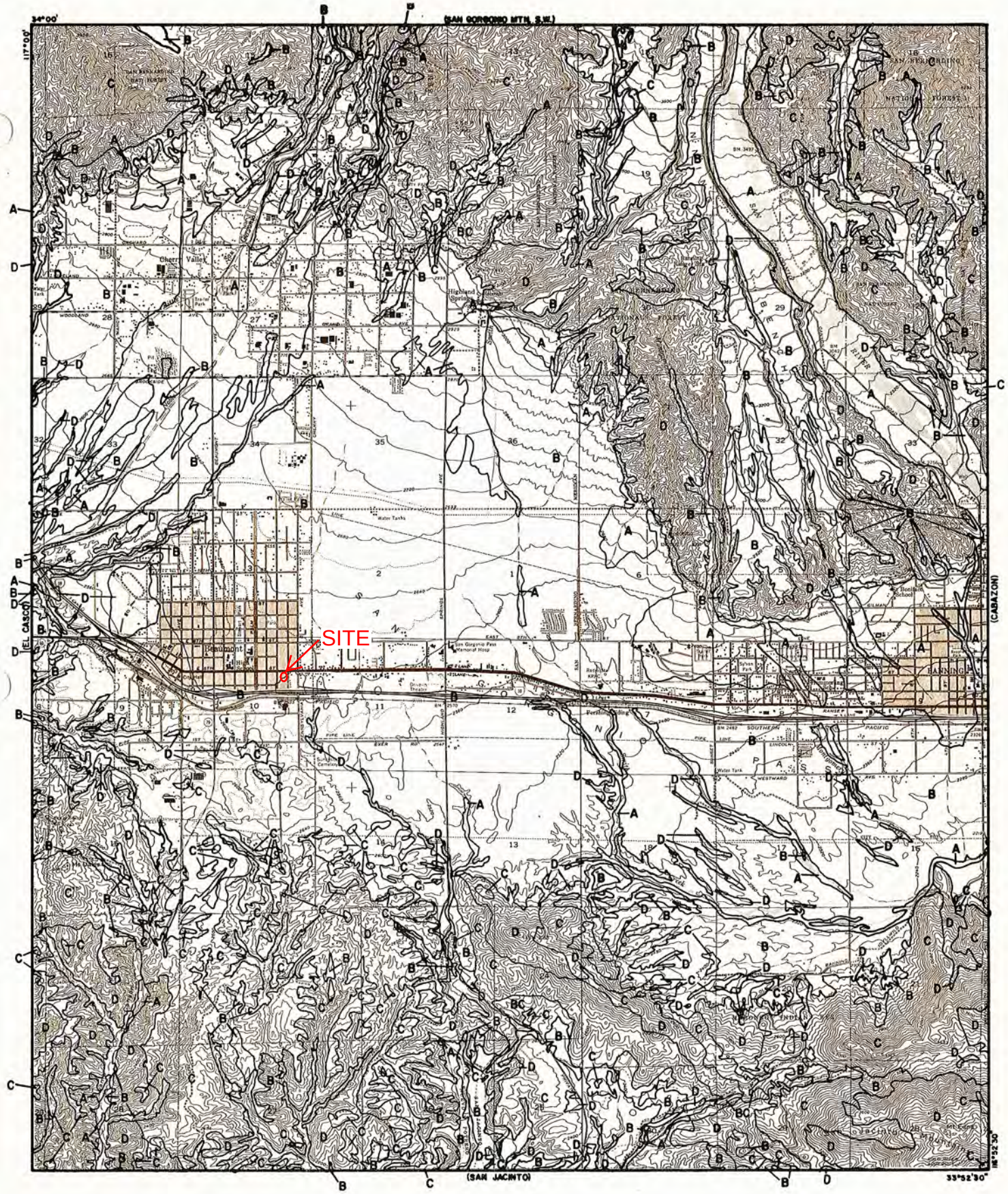
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC & WCD

HYDROLOGY MANUAL

N

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR BEAUMONT

PLATE C-1.19

SECTION 2 – EXISTING CONDITION HYDROLOGY

Existing Condition Unit Hydrograph Method

2 Year, 24 Hour Storm

10 Year - 3 Hour, 6 Hour, 24 Hour Storm

100 Year - 3 Hour, 6 Hour, 24 Hour Storm

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: beaumontex242.out


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

-------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



-------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
2 YEAR, 24 HOUR STORM
EXISTING CONDITION

------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     314.00(Ft.)
Length along longest watercourse measured to centroid =     160.00(Ft.)
Length along longest watercourse =      0.059 Mi.
Length along longest watercourse measured to centroid =      0.030 Mi.
Difference in elevation =       2.90(Ft.)
Slope along watercourse =     48.7643 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time =    0.026 Hr.
Lag time =     1.56 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.62 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.73                  2.76

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           6.52                  6.59

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    2.730(In)
Area Averaged 100-Year Rainfall =    6.520(In)

Point rain (area averaged) =    2.730(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.730(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           86.00         0.180
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.180	0.147	1.000	0.147
					Sum (F) =	0.147

Area averaged mean soil loss (F) (In/Hr) = 0.147
Minimum soil loss rate ((In/Hr)) = 0.074
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	320.782	58.717	0.598
2	0.167	641.564	36.014	0.367
3	0.250	962.346	5.268	0.054
		Sum = 100.000	Sum=	1.018

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.022	0.261	0.020	0.00
2	0.17	0.07	0.022	0.260	0.020	0.00
3	0.25	0.07	0.022	0.259	0.020	0.00
4	0.33	0.10	0.033	0.258	0.029	0.00
5	0.42	0.10	0.033	0.257	0.029	0.00
6	0.50	0.10	0.033	0.256	0.029	0.00
7	0.58	0.10	0.033	0.255	0.029	0.00
8	0.67	0.10	0.033	0.254	0.029	0.00
9	0.75	0.10	0.033	0.253	0.029	0.00
10	0.83	0.13	0.044	0.252	0.039	0.00
11	0.92	0.13	0.044	0.251	0.039	0.00
12	1.00	0.13	0.044	0.250	0.039	0.00
13	1.08	0.10	0.033	0.249	0.029	0.00
14	1.17	0.10	0.033	0.248	0.029	0.00
15	1.25	0.10	0.033	0.247	0.029	0.00
16	1.33	0.10	0.033	0.246	0.029	0.00
17	1.42	0.10	0.033	0.245	0.029	0.00
18	1.50	0.10	0.033	0.244	0.029	0.00
19	1.58	0.10	0.033	0.243	0.029	0.00
20	1.67	0.10	0.033	0.242	0.029	0.00
21	1.75	0.10	0.033	0.241	0.029	0.00
22	1.83	0.13	0.044	0.240	0.039	0.00
23	1.92	0.13	0.044	0.239	0.039	0.00
24	2.00	0.13	0.044	0.238	0.039	0.00
25	2.08	0.13	0.044	0.237	0.039	0.00
26	2.17	0.13	0.044	0.236	0.039	0.00
27	2.25	0.13	0.044	0.235	0.039	0.00
28	2.33	0.13	0.044	0.234	0.039	0.00
29	2.42	0.13	0.044	0.233	0.039	0.00
30	2.50	0.13	0.044	0.232	0.039	0.00
31	2.58	0.17	0.055	0.231	0.049	0.01
32	2.67	0.17	0.055	0.231	0.049	0.01
33	2.75	0.17	0.055	0.230	0.049	0.01
34	2.83	0.17	0.055	0.229	0.049	0.01
35	2.92	0.17	0.055	0.228	0.049	0.01
36	3.00	0.17	0.055	0.227	0.049	0.01
37	3.08	0.17	0.055	0.226	0.049	0.01
38	3.17	0.17	0.055	0.225	0.049	0.01
39	3.25	0.17	0.055	0.224	0.049	0.01
40	3.33	0.17	0.055	0.223	0.049	0.01
41	3.42	0.17	0.055	0.222	0.049	0.01
42	3.50	0.17	0.055	0.221	0.049	0.01

43	3.58	0.17	0.055	0.220	0.049	0.01
44	3.67	0.17	0.055	0.219	0.049	0.01
45	3.75	0.17	0.055	0.218	0.049	0.01
46	3.83	0.20	0.066	0.217	0.059	0.01
47	3.92	0.20	0.066	0.217	0.059	0.01
48	4.00	0.20	0.066	0.216	0.059	0.01
49	4.08	0.20	0.066	0.215	0.059	0.01
50	4.17	0.20	0.066	0.214	0.059	0.01
51	4.25	0.20	0.066	0.213	0.059	0.01
52	4.33	0.23	0.076	0.212	0.069	0.01
53	4.42	0.23	0.076	0.211	0.069	0.01
54	4.50	0.23	0.076	0.210	0.069	0.01
55	4.58	0.23	0.076	0.209	0.069	0.01
56	4.67	0.23	0.076	0.208	0.069	0.01
57	4.75	0.23	0.076	0.207	0.069	0.01
58	4.83	0.27	0.087	0.207	0.079	0.01
59	4.92	0.27	0.087	0.206	0.079	0.01
60	5.00	0.27	0.087	0.205	0.079	0.01
61	5.08	0.20	0.066	0.204	0.059	0.01
62	5.17	0.20	0.066	0.203	0.059	0.01
63	5.25	0.20	0.066	0.202	0.059	0.01
64	5.33	0.23	0.076	0.201	0.069	0.01
65	5.42	0.23	0.076	0.200	0.069	0.01
66	5.50	0.23	0.076	0.199	0.069	0.01
67	5.58	0.27	0.087	0.199	0.079	0.01
68	5.67	0.27	0.087	0.198	0.079	0.01
69	5.75	0.27	0.087	0.197	0.079	0.01
70	5.83	0.27	0.087	0.196	0.079	0.01
71	5.92	0.27	0.087	0.195	0.079	0.01
72	6.00	0.27	0.087	0.194	0.079	0.01
73	6.08	0.30	0.098	0.193	0.088	0.01
74	6.17	0.30	0.098	0.193	0.088	0.01
75	6.25	0.30	0.098	0.192	0.088	0.01
76	6.33	0.30	0.098	0.191	0.088	0.01
77	6.42	0.30	0.098	0.190	0.088	0.01
78	6.50	0.30	0.098	0.189	0.088	0.01
79	6.58	0.33	0.109	0.188	0.098	0.01
80	6.67	0.33	0.109	0.187	0.098	0.01
81	6.75	0.33	0.109	0.187	0.098	0.01
82	6.83	0.33	0.109	0.186	0.098	0.01
83	6.92	0.33	0.109	0.185	0.098	0.01
84	7.00	0.33	0.109	0.184	0.098	0.01
85	7.08	0.33	0.109	0.183	0.098	0.01
86	7.17	0.33	0.109	0.182	0.098	0.01
87	7.25	0.33	0.109	0.182	0.098	0.01
88	7.33	0.37	0.120	0.181	0.108	0.01
89	7.42	0.37	0.120	0.180	0.108	0.01
90	7.50	0.37	0.120	0.179	0.108	0.01
91	7.58	0.40	0.131	0.178	0.118	0.01
92	7.67	0.40	0.131	0.177	0.118	0.01
93	7.75	0.40	0.131	0.177	0.118	0.01
94	7.83	0.43	0.142	0.176	0.128	0.01
95	7.92	0.43	0.142	0.175	0.128	0.01
96	8.00	0.43	0.142	0.174	0.128	0.01
97	8.08	0.50	0.164	0.173	0.147	0.02
98	8.17	0.50	0.164	0.173	0.147	0.02
99	8.25	0.50	0.164	0.172	0.147	0.02
100	8.33	0.50	0.164	0.171	0.147	0.02
101	8.42	0.50	0.164	0.170	0.147	0.02
102	8.50	0.50	0.164	0.169	0.147	0.02
103	8.58	0.53	0.175	0.169	---	0.01
104	8.67	0.53	0.175	0.168	---	0.01
105	8.75	0.53	0.175	0.167	---	0.01
106	8.83	0.57	0.186	0.166	---	0.02
107	8.92	0.57	0.186	0.165	---	0.02
108	9.00	0.57	0.186	0.165	---	0.02
109	9.08	0.63	0.207	0.164	---	0.04
110	9.17	0.63	0.207	0.163	---	0.04
111	9.25	0.63	0.207	0.162	---	0.05
112	9.33	0.67	0.218	0.161	---	0.06
113	9.42	0.67	0.218	0.161	---	0.06

114	9.50	0.67	0.218	0.160	---	0.06
115	9.58	0.70	0.229	0.159	---	0.07
116	9.67	0.70	0.229	0.158	---	0.07
117	9.75	0.70	0.229	0.158	---	0.07
118	9.83	0.73	0.240	0.157	---	0.08
119	9.92	0.73	0.240	0.156	---	0.08
120	10.00	0.73	0.240	0.155	---	0.08
121	10.08	0.50	0.164	0.155	---	0.01
122	10.17	0.50	0.164	0.154	---	0.01
123	10.25	0.50	0.164	0.153	---	0.01
124	10.33	0.50	0.164	0.152	---	0.01
125	10.42	0.50	0.164	0.152	---	0.01
126	10.50	0.50	0.164	0.151	---	0.01
127	10.58	0.67	0.218	0.150	---	0.07
128	10.67	0.67	0.218	0.149	---	0.07
129	10.75	0.67	0.218	0.149	---	0.07
130	10.83	0.67	0.218	0.148	---	0.07
131	10.92	0.67	0.218	0.147	---	0.07
132	11.00	0.67	0.218	0.147	---	0.07
133	11.08	0.63	0.207	0.146	---	0.06
134	11.17	0.63	0.207	0.145	---	0.06
135	11.25	0.63	0.207	0.144	---	0.06
136	11.33	0.63	0.207	0.144	---	0.06
137	11.42	0.63	0.207	0.143	---	0.06
138	11.50	0.63	0.207	0.142	---	0.07
139	11.58	0.57	0.186	0.142	---	0.04
140	11.67	0.57	0.186	0.141	---	0.04
141	11.75	0.57	0.186	0.140	---	0.05
142	11.83	0.60	0.197	0.139	---	0.06
143	11.92	0.60	0.197	0.139	---	0.06
144	12.00	0.60	0.197	0.138	---	0.06
145	12.08	0.83	0.273	0.137	---	0.14
146	12.17	0.83	0.273	0.137	---	0.14
147	12.25	0.83	0.273	0.136	---	0.14
148	12.33	0.87	0.284	0.135	---	0.15
149	12.42	0.87	0.284	0.135	---	0.15
150	12.50	0.87	0.284	0.134	---	0.15
151	12.58	0.93	0.306	0.133	---	0.17
152	12.67	0.93	0.306	0.133	---	0.17
153	12.75	0.93	0.306	0.132	---	0.17
154	12.83	0.97	0.317	0.131	---	0.19
155	12.92	0.97	0.317	0.131	---	0.19
156	13.00	0.97	0.317	0.130	---	0.19
157	13.08	1.13	0.371	0.129	---	0.24
158	13.17	1.13	0.371	0.129	---	0.24
159	13.25	1.13	0.371	0.128	---	0.24
160	13.33	1.13	0.371	0.127	---	0.24
161	13.42	1.13	0.371	0.127	---	0.24
162	13.50	1.13	0.371	0.126	---	0.25
163	13.58	0.77	0.251	0.125	---	0.13
164	13.67	0.77	0.251	0.125	---	0.13
165	13.75	0.77	0.251	0.124	---	0.13
166	13.83	0.77	0.251	0.123	---	0.13
167	13.92	0.77	0.251	0.123	---	0.13
168	14.00	0.77	0.251	0.122	---	0.13
169	14.08	0.90	0.295	0.122	---	0.17
170	14.17	0.90	0.295	0.121	---	0.17
171	14.25	0.90	0.295	0.120	---	0.17
172	14.33	0.87	0.284	0.120	---	0.16
173	14.42	0.87	0.284	0.119	---	0.16
174	14.50	0.87	0.284	0.119	---	0.17
175	14.58	0.87	0.284	0.118	---	0.17
176	14.67	0.87	0.284	0.117	---	0.17
177	14.75	0.87	0.284	0.117	---	0.17
178	14.83	0.83	0.273	0.116	---	0.16
179	14.92	0.83	0.273	0.116	---	0.16
180	15.00	0.83	0.273	0.115	---	0.16
181	15.08	0.80	0.262	0.114	---	0.15
182	15.17	0.80	0.262	0.114	---	0.15
183	15.25	0.80	0.262	0.113	---	0.15
184	15.33	0.77	0.251	0.113	---	0.14

185	15.42	0.77	0.251	0.112	---	0.14
186	15.50	0.77	0.251	0.111	---	0.14
187	15.58	0.63	0.207	0.111	---	0.10
188	15.67	0.63	0.207	0.110	---	0.10
189	15.75	0.63	0.207	0.110	---	0.10
190	15.83	0.63	0.207	0.109	---	0.10
191	15.92	0.63	0.207	0.109	---	0.10
192	16.00	0.63	0.207	0.108	---	0.10
193	16.08	0.13	0.044	0.108	0.039	0.00
194	16.17	0.13	0.044	0.107	0.039	0.00
195	16.25	0.13	0.044	0.106	0.039	0.00
196	16.33	0.13	0.044	0.106	0.039	0.00
197	16.42	0.13	0.044	0.105	0.039	0.00
198	16.50	0.13	0.044	0.105	0.039	0.00
199	16.58	0.10	0.033	0.104	0.029	0.00
200	16.67	0.10	0.033	0.104	0.029	0.00
201	16.75	0.10	0.033	0.103	0.029	0.00
202	16.83	0.10	0.033	0.103	0.029	0.00
203	16.92	0.10	0.033	0.102	0.029	0.00
204	17.00	0.10	0.033	0.102	0.029	0.00
205	17.08	0.17	0.055	0.101	0.049	0.01
206	17.17	0.17	0.055	0.101	0.049	0.01
207	17.25	0.17	0.055	0.100	0.049	0.01
208	17.33	0.17	0.055	0.100	0.049	0.01
209	17.42	0.17	0.055	0.099	0.049	0.01
210	17.50	0.17	0.055	0.099	0.049	0.01
211	17.58	0.17	0.055	0.098	0.049	0.01
212	17.67	0.17	0.055	0.098	0.049	0.01
213	17.75	0.17	0.055	0.097	0.049	0.01
214	17.83	0.13	0.044	0.097	0.039	0.00
215	17.92	0.13	0.044	0.096	0.039	0.00
216	18.00	0.13	0.044	0.096	0.039	0.00
217	18.08	0.13	0.044	0.095	0.039	0.00
218	18.17	0.13	0.044	0.095	0.039	0.00
219	18.25	0.13	0.044	0.094	0.039	0.00
220	18.33	0.13	0.044	0.094	0.039	0.00
221	18.42	0.13	0.044	0.093	0.039	0.00
222	18.50	0.13	0.044	0.093	0.039	0.00
223	18.58	0.10	0.033	0.092	0.029	0.00
224	18.67	0.10	0.033	0.092	0.029	0.00
225	18.75	0.10	0.033	0.092	0.029	0.00
226	18.83	0.07	0.022	0.091	0.020	0.00
227	18.92	0.07	0.022	0.091	0.020	0.00
228	19.00	0.07	0.022	0.090	0.020	0.00
229	19.08	0.10	0.033	0.090	0.029	0.00
230	19.17	0.10	0.033	0.089	0.029	0.00
231	19.25	0.10	0.033	0.089	0.029	0.00
232	19.33	0.13	0.044	0.089	0.039	0.00
233	19.42	0.13	0.044	0.088	0.039	0.00
234	19.50	0.13	0.044	0.088	0.039	0.00
235	19.58	0.10	0.033	0.087	0.029	0.00
236	19.67	0.10	0.033	0.087	0.029	0.00
237	19.75	0.10	0.033	0.087	0.029	0.00
238	19.83	0.07	0.022	0.086	0.020	0.00
239	19.92	0.07	0.022	0.086	0.020	0.00
240	20.00	0.07	0.022	0.085	0.020	0.00
241	20.08	0.10	0.033	0.085	0.029	0.00
242	20.17	0.10	0.033	0.085	0.029	0.00
243	20.25	0.10	0.033	0.084	0.029	0.00
244	20.33	0.10	0.033	0.084	0.029	0.00
245	20.42	0.10	0.033	0.084	0.029	0.00
246	20.50	0.10	0.033	0.083	0.029	0.00
247	20.58	0.10	0.033	0.083	0.029	0.00
248	20.67	0.10	0.033	0.083	0.029	0.00
249	20.75	0.10	0.033	0.082	0.029	0.00
250	20.83	0.07	0.022	0.082	0.020	0.00
251	20.92	0.07	0.022	0.082	0.020	0.00
252	21.00	0.07	0.022	0.081	0.020	0.00
253	21.08	0.10	0.033	0.081	0.029	0.00
254	21.17	0.10	0.033	0.081	0.029	0.00
255	21.25	0.10	0.033	0.080	0.029	0.00

256	21.33	0.07	0.022	0.080	0.020	0.00
257	21.42	0.07	0.022	0.080	0.020	0.00
258	21.50	0.07	0.022	0.079	0.020	0.00
259	21.58	0.10	0.033	0.079	0.029	0.00
260	21.67	0.10	0.033	0.079	0.029	0.00
261	21.75	0.10	0.033	0.079	0.029	0.00
262	21.83	0.07	0.022	0.078	0.020	0.00
263	21.92	0.07	0.022	0.078	0.020	0.00
264	22.00	0.07	0.022	0.078	0.020	0.00
265	22.08	0.10	0.033	0.077	0.029	0.00
266	22.17	0.10	0.033	0.077	0.029	0.00
267	22.25	0.10	0.033	0.077	0.029	0.00
268	22.33	0.07	0.022	0.077	0.020	0.00
269	22.42	0.07	0.022	0.076	0.020	0.00
270	22.50	0.07	0.022	0.076	0.020	0.00
271	22.58	0.07	0.022	0.076	0.020	0.00
272	22.67	0.07	0.022	0.076	0.020	0.00
273	22.75	0.07	0.022	0.076	0.020	0.00
274	22.83	0.07	0.022	0.075	0.020	0.00
275	22.92	0.07	0.022	0.075	0.020	0.00
276	23.00	0.07	0.022	0.075	0.020	0.00
277	23.08	0.07	0.022	0.075	0.020	0.00
278	23.17	0.07	0.022	0.075	0.020	0.00
279	23.25	0.07	0.022	0.075	0.020	0.00
280	23.33	0.07	0.022	0.074	0.020	0.00
281	23.42	0.07	0.022	0.074	0.020	0.00
282	23.50	0.07	0.022	0.074	0.020	0.00
283	23.58	0.07	0.022	0.074	0.020	0.00
284	23.67	0.07	0.022	0.074	0.020	0.00
285	23.75	0.07	0.022	0.074	0.020	0.00
286	23.83	0.07	0.022	0.074	0.020	0.00
287	23.92	0.07	0.022	0.074	0.020	0.00
288	24.00	0.07	0.022	0.074	0.020	0.00
	Sum =	100.0			Sum =	10.7

```
Flood volume = Effective rainfall      0.89(In)
 times area       1.0(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
Total soil loss =      1.84(In)
Total soil loss =     0.155(Ac.Ft)
Total rainfall =      2.73(In)
Flood volume =        3272.5 Cubic Feet
Total soil loss =        6736.4 Cubic Feet
--------------------------------------------------------------------
 Peak flow rate of this hydrograph =      0.249(CFS)
--------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                     24 - H O U R    S T O R M
                R u n o f f      H y d r o g r a p h
--------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

--------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
--------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0000      0.00  Q         |         |         |         |
  0+20       0.0001      0.00  Q         |         |         |         |
  0+25       0.0001      0.00  Q         |         |         |         |
  0+30       0.0001      0.00  Q         |         |         |         |
  0+35       0.0001      0.00  Q         |         |         |         |
  0+40       0.0002      0.00  Q         |         |         |         |
  0+45       0.0002      0.00  Q         |         |         |         |
  0+50       0.0002      0.00  Q         |         |         |         |
  0+55       0.0002      0.00  Q         |         |         |         |
  1+ 0       0.0003      0.00  Q         |         |         |         |
  1+ 5       0.0003      0.00  Q         |         |         |         |
  1+10       0.0003      0.00  Q         |         |         |         |
  1+15       0.0003      0.00  Q         |         |         |         |
  1+20       0.0004      0.00  Q         |         |         |         |
  1+25       0.0004      0.00  Q         |         |         |         |
  1+30       0.0004      0.00  Q         |         |         |         |
```

1+35	0.0004	0.00	Q	|	|	|	|
1+40	0.0004	0.00	Q	|	|	|	|
1+45	0.0005	0.00	Q	|	|	|	|
1+50	0.0005	0.00	Q	|	|	|	|
1+55	0.0005	0.00	Q	|	|	|	|
2+ 0	0.0006	0.00	Q	|	|	|	|
2+ 5	0.0006	0.00	Q	|	|	|	|
2+10	0.0006	0.00	Q	|	|	|	|
2+15	0.0007	0.00	Q	|	|	|	|
2+20	0.0007	0.00	Q	|	|	|	|
2+25	0.0007	0.00	Q	|	|	|	|
2+30	0.0007	0.00	Q	|	|	|	|
2+35	0.0008	0.01	Q	|	|	|	|
2+40	0.0008	0.01	Q	|	|	|	|
2+45	0.0009	0.01	Q	|	|	|	|
2+50	0.0009	0.01	Q	|	|	|	|
2+55	0.0009	0.01	Q	|	|	|	|
3+ 0	0.0010	0.01	Q	|	|	|	|
3+ 5	0.0010	0.01	Q	|	|	|	|
3+10	0.0010	0.01	Q	|	|	|	|
3+15	0.0011	0.01	Q	|	|	|	|
3+20	0.0011	0.01	Q	|	|	|	|
3+25	0.0012	0.01	Q	|	|	|	|
3+30	0.0012	0.01	Q	|	|	|	|
3+35	0.0012	0.01	Q	|	|	|	|
3+40	0.0013	0.01	Q	|	|	|	|
3+45	0.0013	0.01	Q	|	|	|	|
3+50	0.0014	0.01	Q	|	|	|	|
3+55	0.0014	0.01	Q	|	|	|	|
4+ 0	0.0014	0.01	Q	|	|	|	|
4+ 5	0.0015	0.01	Q	|	|	|	|
4+10	0.0015	0.01	Q	|	|	|	|
4+15	0.0016	0.01	Q	|	|	|	|
4+20	0.0016	0.01	Q	|	|	|	|
4+25	0.0017	0.01	Q	|	|	|	|
4+30	0.0017	0.01	Q	|	|	|	|
4+35	0.0018	0.01	Q	|	|	|	|
4+40	0.0019	0.01	Q	|	|	|	|
4+45	0.0019	0.01	QV	|	|	|	|
4+50	0.0020	0.01	QV	|	|	|	|
4+55	0.0020	0.01	QV	|	|	|	|
5+ 0	0.0021	0.01	QV	|	|	|	|
5+ 5	0.0021	0.01	QV	|	|	|	|
5+10	0.0022	0.01	QV	|	|	|	|
5+15	0.0022	0.01	QV	|	|	|	|
5+20	0.0023	0.01	QV	|	|	|	|
5+25	0.0023	0.01	QV	|	|	|	|
5+30	0.0024	0.01	QV	|	|	|	|
5+35	0.0024	0.01	QV	|	|	|	|
5+40	0.0025	0.01	QV	|	|	|	|
5+45	0.0026	0.01	QV	|	|	|	|
5+50	0.0026	0.01	QV	|	|	|	|
5+55	0.0027	0.01	QV	|	|	|	|
6+ 0	0.0028	0.01	QV	|	|	|	|
6+ 5	0.0028	0.01	QV	|	|	|	|
6+10	0.0029	0.01	QV	|	|	|	|
6+15	0.0030	0.01	QV	|	|	|	|
6+20	0.0030	0.01	QV	|	|	|	|
6+25	0.0031	0.01	QV	|	|	|	|
6+30	0.0032	0.01	QV	|	|	|	|
6+35	0.0032	0.01	QV	|	|	|	|
6+40	0.0033	0.01	QV	|	|	|	|
6+45	0.0034	0.01	QV	|	|	|	|
6+50	0.0035	0.01	QV	|	|	|	|
6+55	0.0035	0.01	QV	|	|	|	|
7+ 0	0.0036	0.01	QV	|	|	|	|
7+ 5	0.0037	0.01	QV	|	|	|	|
7+10	0.0038	0.01	Q V	|	|	|	|
7+15	0.0038	0.01	Q V	|	|	|	|
7+20	0.0039	0.01	Q V	|	|	|	|
7+25	0.0040	0.01	Q V	|	|	|	|

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 7+30       0.0041      0.01  Q V       |         |         |         |
 7+35       0.0042      0.01  Q V       |         |         |         |
 7+40       0.0043      0.01  Q V       |         |         |         |
 7+45       0.0044      0.01  Q V       |         |         |         |
 7+50       0.0045      0.01  Q V       |         |         |         |
 7+55       0.0046      0.01  Q V       |         |         |         |
 8+ 0       0.0047      0.01  Q V       |         |         |         |
 8+ 5       0.0048      0.02  Q V       |         |         |         |
 8+10       0.0049      0.02  Q V       |         |         |         |
 8+15       0.0050      0.02  Q V       |         |         |         |
 8+20       0.0051      0.02  Q V       |         |         |         |
 8+25       0.0052      0.02  Q V       |         |         |         |
 8+30       0.0053      0.02  Q V       |         |         |         |
 8+35       0.0054      0.01  Q V       |         |         |         |
 8+40       0.0055      0.01  Q V       |         |         |         |
 8+45       0.0055      0.01  Q V       |         |         |         |
 8+50       0.0056      0.01  Q V       |         |         |         |
 8+55       0.0058      0.02  Q  V      |         |         |         |
 9+ 0       0.0059      0.02  Q  V      |         |         |         |
 9+ 5       0.0061      0.03  Q  V      |         |         |         |
 9+10       0.0064      0.04  Q  V      |         |         |         |
 9+15       0.0068      0.05  Q  V      |         |         |         |
 9+20       0.0071      0.05  Q  V      |         |         |         |
 9+25       0.0075      0.06  Q   V     |         |         |         |
 9+30       0.0079      0.06  Q   V     |         |         |         |
 9+35       0.0084      0.07  Q   V     |         |         |         |
 9+40       0.0089      0.07  Q   V     |         |         |         |
 9+45       0.0094      0.07  Q   V     |         |         |         |
 9+50       0.0099      0.08  Q    V    |         |         |         |
 9+55       0.0105      0.08  Q    V    |         |         |         |
10+ 0       0.0111      0.09  Q    V    |         |         |         |
10+ 5       0.0114      0.04  Q     V   |         |         |         |
10+10       0.0115      0.01  Q     V   |         |         |         |
10+15       0.0116      0.01  Q     V   |         |         |         |
10+20       0.0116      0.01  Q     V   |         |         |         |
10+25       0.0117      0.01  Q     V   |         |         |         |
10+30       0.0118      0.01  Q     V   |         |         |         |
10+35       0.0121      0.05  Q     V   |         |         |         |
10+40       0.0126      0.07  Q     V   |         |         |         |
10+45       0.0131      0.07  Q     V   |         |         |         |
10+50       0.0136      0.07  Q      V  |         |         |         |
10+55       0.0141      0.07  Q      V  |         |         |         |
11+ 0       0.0146      0.07  Q      V  |         |         |         |
11+ 5       0.0150      0.07  Q      V  |         |         |         |
11+10       0.0155      0.06  Q       V |         |         |         |
11+15       0.0159      0.06  Q       V |         |         |         |
11+20       0.0163      0.06  Q       V |         |         |         |
11+25       0.0168      0.07  Q       V |         |         |         |
11+30       0.0173      0.07  Q        V|         |         |         |
11+35       0.0176      0.05  Q        V|         |         |         |
11+40       0.0179      0.05  Q        V|         |         |         |
11+45       0.0183      0.05  Q        V|         |         |         |
11+50       0.0186      0.05  Q        V|         |         |         |
11+55       0.0190      0.06  Q         V         |         |         |
12+ 0       0.0194      0.06  Q         V         |         |         |
12+ 5       0.0202      0.11  Q         V         |         |         |
12+10       0.0211      0.13  Q         |V        |         |         |
12+15       0.0220      0.14  Q         |V        |         |         |
12+20       0.0231      0.15  Q         | V       |         |         |
12+25       0.0241      0.15  Q         | V       |         |         |
12+30       0.0251      0.15  Q         |  V      |         |         |
12+35       0.0263      0.17  Q         |  V      |         |         |
12+40       0.0275      0.17  Q         |   V     |         |         |
12+45       0.0287      0.18  Q         |    V    |         |         |
12+50       0.0300      0.18  Q         |    V    |         |         |
12+55       0.0313      0.19  Q         |     V   |         |         |
13+ 0       0.0326      0.19  Q         |      V  |         |         |
13+ 5       0.0341      0.22  Q         |       V |         |         |
13+10       0.0358      0.24  Q         |        V|         |         |
13+15       0.0375      0.25  Q         |        V|         |         |
13+20       0.0392      0.25  Q         |         V         |         |
```

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13+25       0.0409      0.25  Q          |          |V        |          |
13+30       0.0426      0.25  Q          |          | V       |          |
13+35       0.0439      0.18  Q          |          |  V      |          |
13+40       0.0448      0.13  Q          |          |  V      |          |
13+45       0.0457      0.13  Q          |          |   V     |          |
13+50       0.0466      0.13  Q          |          |   V     |          |
13+55       0.0475      0.13  Q          |          |    V    |          |
14+ 0       0.0484      0.13  Q          |          |    V    |          |
14+ 5       0.0495      0.16  Q          |          |     V   |          |
14+10       0.0507      0.17  Q          |          |     V   |          |
14+15       0.0519      0.18  Q          |          |      V  |          |
14+20       0.0531      0.17  Q          |          |       V |          |
14+25       0.0542      0.17  Q          |          |       V |          |
14+30       0.0554      0.17  Q          |          |        V|          |
14+35       0.0566      0.17  Q          |          |         V          |
14+40       0.0577      0.17  Q          |          |         V          |
14+45       0.0589      0.17  Q          |          |         |V         |
14+50       0.0600      0.16  Q          |          |         |V         |
14+55       0.0611      0.16  Q          |          |         | V        |
15+ 0       0.0622      0.16  Q          |          |         |  V       |
15+ 5       0.0633      0.15  Q          |          |         |  V       |
15+10       0.0643      0.15  Q          |          |         |   V      |
15+15       0.0654      0.15  Q          |          |         |   V      |
15+20       0.0664      0.15  Q          |          |         |    V     |
15+25       0.0674      0.14  Q          |          |         |    V     |
15+30       0.0683      0.14  Q          |          |         |     V    |
15+35       0.0691      0.12  Q          |          |         |     V    |
15+40       0.0698      0.10  Q          |          |         |      V   |
15+45       0.0705      0.10  Q          |          |         |      V   |
15+50       0.0712      0.10  Q          |          |         |      V   |
15+55       0.0719      0.10  Q          |          |         |       V  |
16+ 0       0.0726      0.10  Q          |          |         |       V  |
16+ 5       0.0729      0.04  Q          |          |         |       V  |
16+10       0.0730      0.01  Q          |          |         |       V  |
16+15       0.0730      0.00  Q          |          |         |       V  |
16+20       0.0730      0.00  Q          |          |         |       V  |
16+25       0.0731      0.00  Q          |          |         |       V  |
16+30       0.0731      0.00  Q          |          |         |       V  |
16+35       0.0731      0.00  Q          |          |         |       V  |
16+40       0.0731      0.00  Q          |          |         |       V  |
16+45       0.0732      0.00  Q          |          |         |       V  |
16+50       0.0732      0.00  Q          |          |         |       V  |
16+55       0.0732      0.00  Q          |          |         |       V  |
17+ 0       0.0732      0.00  Q          |          |         |       V  |
17+ 5       0.0733      0.00  Q          |          |         |        V|
17+10       0.0733      0.01  Q          |          |         |        V|
17+15       0.0733      0.01  Q          |          |         |        V|
17+20       0.0734      0.01  Q          |          |         |        V|
17+25       0.0734      0.01  Q          |          |         |        V|
17+30       0.0735      0.01  Q          |          |         |        V|
17+35       0.0735      0.01  Q          |          |         |        V|
17+40       0.0735      0.01  Q          |          |         |        V|
17+45       0.0736      0.01  Q          |          |         |        V|
17+50       0.0736      0.00  Q          |          |         |        V|
17+55       0.0736      0.00  Q          |          |         |        V|
18+ 0       0.0737      0.00  Q          |          |         |        V|
18+ 5       0.0737      0.00  Q          |          |         |        V|
18+10       0.0737      0.00  Q          |          |         |        V|
18+15       0.0738      0.00  Q          |          |         |        V|
18+20       0.0738      0.00  Q          |          |         |        V|
18+25       0.0738      0.00  Q          |          |         |        V|
18+30       0.0738      0.00  Q          |          |         |        V|
18+35       0.0739      0.00  Q          |          |         |        V|
18+40       0.0739      0.00  Q          |          |         |        V|
18+45       0.0739      0.00  Q          |          |         |        V|
18+50       0.0739      0.00  Q          |          |         |        V|
18+55       0.0740      0.00  Q          |          |         |        V|
19+ 0       0.0740      0.00  Q          |          |         |        V|
19+ 5       0.0740      0.00  Q          |          |         |        V|
19+10       0.0740      0.00  Q          |          |         |        V|
19+15       0.0740      0.00  Q          |          |         |        V|
```

```
  19+20       0.0741      0.00  Q          |          |          |         V|
  19+25       0.0741      0.00  Q          |          |          |         V|
  19+30       0.0741      0.00  Q          |          |          |         V|
  19+35       0.0742      0.00  Q          |          |          |         V|
  19+40       0.0742      0.00  Q          |          |          |         V|
  19+45       0.0742      0.00  Q          |          |          |         V|
  19+50       0.0742      0.00  Q          |          |          |         V|
  19+55       0.0742      0.00  Q          |          |          |         V|
  20+ 0       0.0742      0.00  Q          |          |          |         V|
  20+ 5       0.0743      0.00  Q          |          |          |         V|
  20+10       0.0743      0.00  Q          |          |          |         V|
  20+15       0.0743      0.00  Q          |          |          |         V|
  20+20       0.0743      0.00  Q          |          |          |         V|
  20+25       0.0744      0.00  Q          |          |          |         V|
  20+30       0.0744      0.00  Q          |          |          |         V|
  20+35       0.0744      0.00  Q          |          |          |         V|
  20+40       0.0744      0.00  Q          |          |          |         V|
  20+45       0.0744      0.00  Q          |          |          |         V|
  20+50       0.0745      0.00  Q          |          |          |         V|
  20+55       0.0745      0.00  Q          |          |          |         V|
  21+ 0       0.0745      0.00  Q          |          |          |         V|
  21+ 5       0.0745      0.00  Q          |          |          |         V|
  21+10       0.0745      0.00  Q          |          |          |         V|
  21+15       0.0746      0.00  Q          |          |          |         V|
  21+20       0.0746      0.00  Q          |          |          |         V|
  21+25       0.0746      0.00  Q          |          |          |         V|
  21+30       0.0746      0.00  Q          |          |          |         V|
  21+35       0.0746      0.00  Q          |          |          |         V|
  21+40       0.0747      0.00  Q          |          |          |         V|
  21+45       0.0747      0.00  Q          |          |          |         V|
  21+50       0.0747      0.00  Q          |          |          |         V|
  21+55       0.0747      0.00  Q          |          |          |         V|
  22+ 0       0.0747      0.00  Q          |          |          |         V|
  22+ 5       0.0747      0.00  Q          |          |          |         V|
  22+10       0.0748      0.00  Q          |          |          |         V|
  22+15       0.0748      0.00  Q          |          |          |         V|
  22+20       0.0748      0.00  Q          |          |          |         V|
  22+25       0.0748      0.00  Q          |          |          |         V|
  22+30       0.0748      0.00  Q          |          |          |         V|
  22+35       0.0749      0.00  Q          |          |          |         V|
  22+40       0.0749      0.00  Q          |          |          |         V|
  22+45       0.0749      0.00  Q          |          |          |         V|
  22+50       0.0749      0.00  Q          |          |          |         V|
  22+55       0.0749      0.00  Q          |          |          |         V|
  23+ 0       0.0749      0.00  Q          |          |          |         V|
  23+ 5       0.0750      0.00  Q          |          |          |         V|
  23+10       0.0750      0.00  Q          |          |          |         V|
  23+15       0.0750      0.00  Q          |          |          |         V|
  23+20       0.0750      0.00  Q          |          |          |         V|
  23+25       0.0750      0.00  Q          |          |          |         V|
  23+30       0.0750      0.00  Q          |          |          |         V|
  23+35       0.0750      0.00  Q          |          |          |         V|
  23+40       0.0751      0.00  Q          |          |          |         V|
  23+45       0.0751      0.00  Q          |          |          |         V|
  23+50       0.0751      0.00  Q          |          |          |         V|
  23+55       0.0751      0.00  Q          |          |          |         V|
  24+ 0       0.0751      0.00  Q          |          |          |         V|
  24+ 5       0.0751      0.00  Q          |          |          |         V|
  24+10       0.0751      0.00  Q          |          |          |         V|
----------------------------------------------------------------------------
```

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: beaumontex310.out


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----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

-------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



-------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
10 YEAR, 3 HOUR STORM
EXISTING CONDITION

------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     314.00(Ft.)
Length along longest watercourse measured to centroid =     160.00(Ft.)
Length along longest watercourse =      0.059 Mi.
Length along longest watercourse measured to centroid =      0.030 Mi.
Difference in elevation =       2.90(Ft.)
Slope along watercourse =     48.7643 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time =    0.026 Hr.
Lag time =     1.56 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.62 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           0.97                  0.98

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.54                  2.57

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.971(In)
Area Averaged 100-Year Rainfall =    2.540(In)

Point rain (area averaged) =    1.616(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.616(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           86.00         0.180
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.180	0.147	1.000	0.147
					Sum (F) =	0.147

Area averaged mean soil loss (F) (In/Hr) = 0.147
Minimum soil loss rate ((In/Hr)) = 0.074
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	320.782	58.717	0.598
2	0.167	641.564	36.014	0.367
3	0.250	962.346	5.268	0.054
		Sum = 100.000	Sum=	1.018

Storm Event 4 Effective Rainfall = 0.242(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.038	0.147	0.034	0.00
2	0.17	1.30	0.038	0.147	0.034	0.00
3	0.25	1.10	0.032	0.147	0.029	0.00
4	0.33	1.50	0.044	0.147	0.039	0.00
5	0.42	1.50	0.044	0.147	0.039	0.00
6	0.50	1.80	0.052	0.147	0.047	0.01
7	0.58	1.50	0.044	0.147	0.039	0.00
8	0.67	1.80	0.052	0.147	0.047	0.01
9	0.75	1.80	0.052	0.147	0.047	0.01
10	0.83	1.50	0.044	0.147	0.039	0.00
11	0.92	1.60	0.047	0.147	0.042	0.00
12	1.00	1.80	0.052	0.147	0.047	0.01
13	1.08	2.20	0.064	0.147	0.058	0.01
14	1.17	2.20	0.064	0.147	0.058	0.01
15	1.25	2.20	0.064	0.147	0.058	0.01
16	1.33	2.00	0.058	0.147	0.052	0.01
17	1.42	2.60	0.076	0.147	0.068	0.01
18	1.50	2.70	0.079	0.147	0.071	0.01
19	1.58	2.40	0.070	0.147	0.063	0.01
20	1.67	2.70	0.079	0.147	0.071	0.01
21	1.75	3.30	0.096	0.147	0.086	0.01
22	1.83	3.10	0.090	0.147	0.081	0.01
23	1.92	2.90	0.084	0.147	0.076	0.01
24	2.00	3.00	0.087	0.147	0.079	0.01
25	2.08	3.10	0.090	0.147	0.081	0.01
26	2.17	4.20	0.122	0.147	0.110	0.01
27	2.25	5.00	0.145	0.147	0.131	0.01
28	2.33	3.50	0.102	0.147	0.092	0.01
29	2.42	6.80	0.198	0.147	---	0.05
30	2.50	7.30	0.212	0.147	---	0.07
31	2.58	8.20	0.239	0.147	---	0.09
32	2.67	5.90	0.172	0.147	---	0.02
33	2.75	2.00	0.058	0.147	0.052	0.01
34	2.83	1.80	0.052	0.147	0.047	0.01
35	2.92	1.80	0.052	0.147	0.047	0.01
36	3.00	0.60	0.017	0.147	0.016	0.00
Sum =		100.0			Sum =	0.4

Flood volume = Effective rainfall 0.04(In)

```
        times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
       Total soil loss =      0.21(In)
       Total soil loss =     0.017(Ac.Ft)
       Total rainfall =      0.24(In)
       Flood volume =         134.7 Cubic Feet
       Total soil loss =         754.3 Cubic Feet
----------------------------------------------------------------------
          Storm Event 3   Effective Rainfall =   0.307(In)
----------------------------------------------------------------------
```

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1 0.08	1.30	0.048	0.147	0.043	0.00
2 0.17	1.30	0.048	0.147	0.043	0.00
3 0.25	1.10	0.041	0.147	0.036	0.00
4 0.33	1.50	0.055	0.147	0.050	0.01
5 0.42	1.50	0.055	0.147	0.050	0.01
6 0.50	1.80	0.066	0.147	0.060	0.01
7 0.58	1.50	0.055	0.147	0.050	0.01
8 0.67	1.80	0.066	0.147	0.060	0.01
9 0.75	1.80	0.066	0.147	0.060	0.01
10 0.83	1.50	0.055	0.147	0.050	0.01
11 0.92	1.60	0.059	0.147	0.053	0.01
12 1.00	1.80	0.066	0.147	0.060	0.01
13 1.08	2.20	0.081	0.147	0.073	0.01
14 1.17	2.20	0.081	0.147	0.073	0.01
15 1.25	2.20	0.081	0.147	0.073	0.01
16 1.33	2.00	0.074	0.147	0.066	0.01
17 1.42	2.60	0.096	0.147	0.086	0.01
18 1.50	2.70	0.100	0.147	0.090	0.01
19 1.58	2.40	0.088	0.147	0.080	0.01
20 1.67	2.70	0.100	0.147	0.090	0.01
21 1.75	3.30	0.122	0.147	0.109	0.01
22 1.83	3.10	0.114	0.147	0.103	0.01
23 1.92	2.90	0.107	0.147	0.096	0.01
24 2.00	3.00	0.111	0.147	0.100	0.01
25 2.08	3.10	0.114	0.147	0.103	0.01
26 2.17	4.20	0.155	0.147	---	0.01
27 2.25	5.00	0.184	0.147	---	0.04
28 2.33	3.50	0.129	0.147	0.116	0.01
29 2.42	6.80	0.251	0.147	---	0.10
30 2.50	7.30	0.269	0.147	---	0.12
31 2.58	8.20	0.302	0.147	---	0.16
32 2.67	5.90	0.217	0.147	---	0.07
33 2.75	2.00	0.074	0.147	0.066	0.01
34 2.83	1.80	0.066	0.147	0.060	0.01
35 2.92	1.80	0.066	0.147	0.060	0.01
36 3.00	0.60	0.022	0.147	0.020	0.00
Sum =	100.0			Sum =	0.7

```
       Flood volume = Effective rainfall      0.06(In)
        times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
       Total soil loss =      0.25(In)
       Total soil loss =     0.021(Ac.Ft)
       Total rainfall =      0.31(In)
       Flood volume =         221.9 Cubic Feet
       Total soil loss =         904.2 Cubic Feet
----------------------------------------------------------------------
          Storm Event 2   Effective Rainfall =   0.582(In)
----------------------------------------------------------------------
```

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1 0.08	1.30	0.091	0.147	0.082	0.01
2 0.17	1.30	0.091	0.147	0.082	0.01
3 0.25	1.10	0.077	0.147	0.069	0.01
4 0.33	1.50	0.105	0.147	0.094	0.01
5 0.42	1.50	0.105	0.147	0.094	0.01
6 0.50	1.80	0.126	0.147	0.113	0.01
7 0.58	1.50	0.105	0.147	0.094	0.01
8 0.67	1.80	0.126	0.147	0.113	0.01
9 0.75	1.80	0.126	0.147	0.113	0.01

10	0.83	1.50	0.105	0.147	0.094	0.01
11	0.92	1.60	0.112	0.147	0.101	0.01
12	1.00	1.80	0.126	0.147	0.113	0.01
13	1.08	2.20	0.154	0.147	---	0.01
14	1.17	2.20	0.154	0.147	---	0.01
15	1.25	2.20	0.154	0.147	---	0.01
16	1.33	2.00	0.140	0.147	0.126	0.01
17	1.42	2.60	0.182	0.147	---	0.03
18	1.50	2.70	0.189	0.147	---	0.04
19	1.58	2.40	0.168	0.147	---	0.02
20	1.67	2.70	0.189	0.147	---	0.04
21	1.75	3.30	0.230	0.147	---	0.08
22	1.83	3.10	0.216	0.147	---	0.07
23	1.92	2.90	0.203	0.147	---	0.06
24	2.00	3.00	0.209	0.147	---	0.06
25	2.08	3.10	0.216	0.147	---	0.07
26	2.17	4.20	0.293	0.147	---	0.15
27	2.25	5.00	0.349	0.147	---	0.20
28	2.33	3.50	0.244	0.147	---	0.10
29	2.42	6.80	0.475	0.147	---	0.33
30	2.50	7.30	0.510	0.147	---	0.36
31	2.58	8.20	0.573	0.147	---	0.43
32	2.67	5.90	0.412	0.147	---	0.26
33	2.75	2.00	0.140	0.147	0.126	0.01
34	2.83	1.80	0.126	0.147	0.113	0.01
35	2.92	1.80	0.126	0.147	0.113	0.01
36	3.00	0.60	0.042	0.147	0.038	0.00
Sum =		100.0			Sum =	2.5

Flood volume = Effective rainfall 0.21(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.37(In)
Total soil loss = 0.031(Ac.Ft)
Total rainfall = 0.58(In)
Flood volume = 766.6 Cubic Feet
Total soil loss = 1366.9 Cubic Feet

Storm Event 1 Effective Rainfall = 1.616(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.252	0.147	---	0.11
2	0.17	1.30	0.252	0.147	---	0.11
3	0.25	1.10	0.213	0.147	---	0.07
4	0.33	1.50	0.291	0.147	---	0.14
5	0.42	1.50	0.291	0.147	---	0.14
6	0.50	1.80	0.349	0.147	---	0.20
7	0.58	1.50	0.291	0.147	---	0.14
8	0.67	1.80	0.349	0.147	---	0.20
9	0.75	1.80	0.349	0.147	---	0.20
10	0.83	1.50	0.291	0.147	---	0.14
11	0.92	1.60	0.310	0.147	---	0.16
12	1.00	1.80	0.349	0.147	---	0.20
13	1.08	2.20	0.427	0.147	---	0.28
14	1.17	2.20	0.427	0.147	---	0.28
15	1.25	2.20	0.427	0.147	---	0.28
16	1.33	2.00	0.388	0.147	---	0.24
17	1.42	2.60	0.504	0.147	---	0.36
18	1.50	2.70	0.524	0.147	---	0.38
19	1.58	2.40	0.466	0.147	---	0.32
20	1.67	2.70	0.524	0.147	---	0.38
21	1.75	3.30	0.640	0.147	---	0.49
22	1.83	3.10	0.601	0.147	---	0.45
23	1.92	2.90	0.563	0.147	---	0.42
24	2.00	3.00	0.582	0.147	---	0.43
25	2.08	3.10	0.601	0.147	---	0.45
26	2.17	4.20	0.815	0.147	---	0.67
27	2.25	5.00	0.970	0.147	---	0.82
28	2.33	3.50	0.679	0.147	---	0.53
29	2.42	6.80	1.319	0.147	---	1.17
30	2.50	7.30	1.416	0.147	---	1.27

```
31   2.58     8.20      1.591         0.147      ---          1.44
32   2.67     5.90      1.144         0.147      ---          1.00
33   2.75     2.00      0.388         0.147      ---          0.24
34   2.83     1.80      0.349         0.147      ---          0.20
35   2.92     1.80      0.349         0.147      ---          0.20
36   3.00     0.60      0.116         0.147     0.105         0.01
   Sum =     100.0                                    Sum =    14.1
      Flood volume = Effective rainfall      1.18(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      0.44(In)
      Total soil loss =     0.037(Ac.Ft)
      Total rainfall =      1.62(In)
      Flood volume =        4321.0 Cubic Feet
      Total soil loss =        1605.6 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      1.391(CFS)
      ---------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       3 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0001      0.00  Q         |         |         |         |
  0+20       0.0001      0.00  Q         |         |         |         |
  0+25       0.0001      0.00  Q         |         |         |         |
  0+30       0.0002      0.00  Q         |         |         |         |
  0+35       0.0002      0.00  Q         |         |         |         |
  0+40       0.0002      0.01  Q         |         |         |         |
  0+45       0.0003      0.01  Q         |         |         |         |
  0+50       0.0003      0.00  Q         |         |         |         |
  0+55       0.0003      0.00  Q         |         |         |         |
  1+ 0       0.0004      0.01  Q         |         |         |         |
  1+ 5       0.0004      0.01  Q         |         |         |         |
  1+10       0.0004      0.01  Q         |         |         |         |
  1+15       0.0005      0.01  Q         |         |         |         |
  1+20       0.0005      0.01  Q         |         |         |         |
  1+25       0.0006      0.01  Q         |         |         |         |
  1+30       0.0006      0.01  Q         |         |         |         |
  1+35       0.0007      0.01  Q         |         |         |         |
  1+40       0.0007      0.01  Q         |         |         |         |
  1+45       0.0008      0.01  Q         |         |         |         |
  1+50       0.0009      0.01  Q         |         |         |         |
  1+55       0.0009      0.01  Q         |         |         |         |
  2+ 0       0.0010      0.01  Q         |         |         |         |
  2+ 5       0.0011      0.01  Q         |         |         |         |
  2+10       0.0011      0.01  Q         |         |         |         |
  2+15       0.0012      0.01  Q         |         |         |         |
  2+20       0.0013      0.01  Q         |         |         |         |
  2+25       0.0015      0.03  Q         |         |         |         |
  2+30       0.0019      0.06  Q         |         |         |         |
  2+35       0.0025      0.08  Q         |         |         |         |
  2+40       0.0029      0.05  Q         |         |         |         |
  2+45       0.0030      0.02  Q         |         |         |         |
  2+50       0.0030      0.01  Q         |         |         |         |
  2+55       0.0031      0.01  Q         |         |         |         |
  3+ 0       0.0031      0.00  Q         |         |         |         |
  3+ 5       0.0031      0.00  Q         |         |         |         |
  3+10       0.0031      0.00  QV        |         |         |         |
  3+15       0.0032      0.00  QV        |         |         |         |
  3+20       0.0032      0.01  QV        |         |         |         |
  3+25       0.0032      0.01  QV        |         |         |         |
  3+30       0.0033      0.01  QV        |         |         |         |
  3+35       0.0033      0.01  QV        |         |         |         |
  3+40       0.0034      0.01  QV        |         |         |         |
  3+45       0.0034      0.01  QV        |         |         |         |
```

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3+50       0.0035      0.01  QV        |          |          |          |
3+55       0.0035      0.01  QV        |          |          |          |
4+ 0       0.0035      0.01  QV        |          |          |          |
4+ 5       0.0036      0.01  QV        |          |          |          |
4+10       0.0037      0.01  QV        |          |          |          |
4+15       0.0037      0.01  QV        |          |          |          |
4+20       0.0038      0.01  QV        |          |          |          |
4+25       0.0038      0.01  QV        |          |          |          |
4+30       0.0039      0.01  QV        |          |          |          |
4+35       0.0040      0.01  QV        |          |          |          |
4+40       0.0040      0.01  QV        |          |          |          |
4+45       0.0041      0.01  QV        |          |          |          |
4+50       0.0042      0.01  QV        |          |          |          |
4+55       0.0043      0.01  QV        |          |          |          |
5+ 0       0.0043      0.01  QV        |          |          |          |
5+ 5       0.0044      0.01  QV        |          |          |          |
5+10       0.0045      0.01  QV        |          |          |          |
5+15       0.0047      0.03  QV        |          |          |          |
5+20       0.0048      0.02  QV        |          |          |          |
5+25       0.0053      0.07  QV        |          |          |          |
5+30       0.0060      0.11  QV        |          |          |          |
5+35       0.0070      0.14  Q V       |          |          |          |
5+40       0.0078      0.11  Q V       |          |          |          |
5+45       0.0080      0.04  Q V       |          |          |          |
5+50       0.0081      0.01  Q V       |          |          |          |
5+55       0.0081      0.01  Q V       |          |          |          |
6+ 0       0.0082      0.00  Q V       |          |          |          |
6+ 5       0.0082      0.01  Q V       |          |          |          |
6+10       0.0083      0.01  Q V       |          |          |          |
6+15       0.0083      0.01  Q V       |          |          |          |
6+20       0.0084      0.01  Q V       |          |          |          |
6+25       0.0085      0.01  Q V       |          |          |          |
6+30       0.0085      0.01  Q V       |          |          |          |
6+35       0.0086      0.01  Q V       |          |          |          |
6+40       0.0087      0.01  Q V       |          |          |          |
6+45       0.0088      0.01  Q V       |          |          |          |
6+50       0.0089      0.01  Q V       |          |          |          |
6+55       0.0090      0.01  Q V       |          |          |          |
7+ 0       0.0090      0.01  Q V       |          |          |          |
7+ 5       0.0091      0.01  Q V       |          |          |          |
7+10       0.0091      0.01  Q V       |          |          |          |
7+15       0.0092      0.01  Q V       |          |          |          |
7+20       0.0093      0.01  Q V       |          |          |          |
7+25       0.0094      0.03  Q  V      |          |          |          |
7+30       0.0097      0.04  Q  V      |          |          |          |
7+35       0.0099      0.03  Q  V      |          |          |          |
7+40       0.0101      0.03  Q  V      |          |          |          |
7+45       0.0106      0.07  Q  V      |          |          |          |
7+50       0.0111      0.07  Q  V      |          |          |          |
7+55       0.0115      0.06  Q  V      |          |          |          |
8+ 0       0.0120      0.06  Q  V      |          |          |          |
8+ 5       0.0124      0.07  Q  V      |          |          |          |
8+10       0.0132      0.12  Q   V     |          |          |          |
8+15       0.0145      0.18  Q   V     |          |          |          |
8+20       0.0154      0.14  Q   V     |          |          |          |
8
```

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: beaumontex610.out


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

-------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



-------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
10 YEAR, 6 HOUR STORM
EXISTING CONDITION

------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     314.00(Ft.)
Length along longest watercourse measured to centroid =     160.00(Ft.)
Length along longest watercourse =      0.059 Mi.
Length along longest watercourse measured to centroid =      0.030 Mi.
Difference in elevation =       2.90(Ft.)
Slope along watercourse =     48.7643 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time =    0.026 Hr.
Lag time =     1.56 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.62 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           1.40                  1.41

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           3.38                  3.41

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.400(In)
Area Averaged 100-Year Rainfall =    3.380(In)

Point rain (area averaged) =    2.215(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.215(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           86.00         0.180
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.180	0.147	1.000	0.147
					Sum (F) =	0.147

Area averaged mean soil loss (F) (In/Hr) = 0.147
Minimum soil loss rate ((In/Hr)) = 0.074
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	320.782	58.717	0.598
2	0.167	641.564	36.014	0.367
3	0.250	962.346	5.268	0.054
		Sum = 100.000	Sum=	1.018

Storm Event 4 Effective Rainfall = 0.332(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.020	0.147	0.018	0.00
2	0.17	0.60	0.024	0.147	0.022	0.00
3	0.25	0.60	0.024	0.147	0.022	0.00
4	0.33	0.60	0.024	0.147	0.022	0.00
5	0.42	0.60	0.024	0.147	0.022	0.00
6	0.50	0.70	0.028	0.147	0.025	0.00
7	0.58	0.70	0.028	0.147	0.025	0.00
8	0.67	0.70	0.028	0.147	0.025	0.00
9	0.75	0.70	0.028	0.147	0.025	0.00
10	0.83	0.70	0.028	0.147	0.025	0.00
11	0.92	0.70	0.028	0.147	0.025	0.00
12	1.00	0.80	0.032	0.147	0.029	0.00
13	1.08	0.80	0.032	0.147	0.029	0.00
14	1.17	0.80	0.032	0.147	0.029	0.00
15	1.25	0.80	0.032	0.147	0.029	0.00
16	1.33	0.80	0.032	0.147	0.029	0.00
17	1.42	0.80	0.032	0.147	0.029	0.00
18	1.50	0.80	0.032	0.147	0.029	0.00
19	1.58	0.80	0.032	0.147	0.029	0.00
20	1.67	0.80	0.032	0.147	0.029	0.00
21	1.75	0.80	0.032	0.147	0.029	0.00
22	1.83	0.80	0.032	0.147	0.029	0.00
23	1.92	0.80	0.032	0.147	0.029	0.00
24	2.00	0.90	0.036	0.147	0.032	0.00
25	2.08	0.80	0.032	0.147	0.029	0.00
26	2.17	0.90	0.036	0.147	0.032	0.00
27	2.25	0.90	0.036	0.147	0.032	0.00
28	2.33	0.90	0.036	0.147	0.032	0.00
29	2.42	0.90	0.036	0.147	0.032	0.00
30	2.50	0.90	0.036	0.147	0.032	0.00
31	2.58	0.90	0.036	0.147	0.032	0.00
32	2.67	0.90	0.036	0.147	0.032	0.00
33	2.75	1.00	0.040	0.147	0.036	0.00
34	2.83	1.00	0.040	0.147	0.036	0.00
35	2.92	1.00	0.040	0.147	0.036	0.00
36	3.00	1.00	0.040	0.147	0.036	0.00
37	3.08	1.00	0.040	0.147	0.036	0.00
38	3.17	1.10	0.044	0.147	0.039	0.00

39	3.25	1.10	0.044	0.147	0.039	0.00
40	3.33	1.10	0.044	0.147	0.039	0.00
41	3.42	1.20	0.048	0.147	0.043	0.00
42	3.50	1.30	0.052	0.147	0.047	0.01
43	3.58	1.40	0.056	0.147	0.050	0.01
44	3.67	1.40	0.056	0.147	0.050	0.01
45	3.75	1.50	0.060	0.147	0.054	0.01
46	3.83	1.50	0.060	0.147	0.054	0.01
47	3.92	1.60	0.064	0.147	0.057	0.01
48	4.00	1.60	0.064	0.147	0.057	0.01
49	4.08	1.70	0.068	0.147	0.061	0.01
50	4.17	1.80	0.072	0.147	0.065	0.01
51	4.25	1.90	0.076	0.147	0.068	0.01
52	4.33	2.00	0.080	0.147	0.072	0.01
53	4.42	2.10	0.084	0.147	0.075	0.01
54	4.50	2.10	0.084	0.147	0.075	0.01
55	4.58	2.20	0.088	0.147	0.079	0.01
56	4.67	2.30	0.092	0.147	0.083	0.01
57	4.75	2.40	0.096	0.147	0.086	0.01
58	4.83	2.40	0.096	0.147	0.086	0.01
59	4.92	2.50	0.100	0.147	0.090	0.01
60	5.00	2.60	0.104	0.147	0.093	0.01
61	5.08	3.10	0.124	0.147	0.111	0.01
62	5.17	3.60	0.144	0.147	0.129	0.01
63	5.25	3.90	0.155	0.147	---	0.01
64	5.33	4.20	0.167	0.147	---	0.02
65	5.42	4.70	0.187	0.147	---	0.04
66	5.50	5.60	0.223	0.147	---	0.08
67	5.58	1.90	0.076	0.147	0.068	0.01
68	5.67	0.90	0.036	0.147	0.032	0.00
69	5.75	0.60	0.024	0.147	0.022	0.00
70	5.83	0.50	0.020	0.147	0.018	0.00
71	5.92	0.30	0.012	0.147	0.011	0.00
72	6.00	0.20	0.008	0.147	0.007	0.00
	Sum =	100.0			Sum =	0.5

```
      Flood volume = Effective rainfall      0.04(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
      Total soil loss =      0.29(In)
      Total soil loss =     0.025(Ac.Ft)
      Total rainfall =      0.33(In)
      Flood volume =         143.6 Cubic Feet
      Total soil loss =        1074.3 Cubic Feet
----------------------------------------------------------------------
          Storm Event 3   Effective Rainfall =   0.421(In)
----------------------------------------------------------------------
```

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.025	0.147	0.023	0.00
2	0.17	0.60	0.030	0.147	0.027	0.00
3	0.25	0.60	0.030	0.147	0.027	0.00
4	0.33	0.60	0.030	0.147	0.027	0.00
5	0.42	0.60	0.030	0.147	0.027	0.00
6	0.50	0.70	0.035	0.147	0.032	0.00
7	0.58	0.70	0.035	0.147	0.032	0.00
8	0.67	0.70	0.035	0.147	0.032	0.00
9	0.75	0.70	0.035	0.147	0.032	0.00
10	0.83	0.70	0.035	0.147	0.032	0.00
11	0.92	0.70	0.035	0.147	0.032	0.00
12	1.00	0.80	0.040	0.147	0.036	0.00
13	1.08	0.80	0.040	0.147	0.036	0.00
14	1.17	0.80	0.040	0.147	0.036	0.00
15	1.25	0.80	0.040	0.147	0.036	0.00
16	1.33	0.80	0.040	0.147	0.036	0.00
17	1.42	0.80	0.040	0.147	0.036	0.00
18	1.50	0.80	0.040	0.147	0.036	0.00
19	1.58	0.80	0.040	0.147	0.036	0.00
20	1.67	0.80	0.040	0.147	0.036	0.00
21	1.75	0.80	0.040	0.147	0.036	0.00
22	1.83	0.80	0.040	0.147	0.036	0.00
23	1.92	0.80	0.040	0.147	0.036	0.00

24	2.00	0.90	0.045	0.147	0.041	0.00
25	2.08	0.80	0.040	0.147	0.036	0.00
26	2.17	0.90	0.045	0.147	0.041	0.00
27	2.25	0.90	0.045	0.147	0.041	0.00
28	2.33	0.90	0.045	0.147	0.041	0.00
29	2.42	0.90	0.045	0.147	0.041	0.00
30	2.50	0.90	0.045	0.147	0.041	0.00
31	2.58	0.90	0.045	0.147	0.041	0.00
32	2.67	0.90	0.045	0.147	0.041	0.00
33	2.75	1.00	0.050	0.147	0.045	0.01
34	2.83	1.00	0.050	0.147	0.045	0.01
35	2.92	1.00	0.050	0.147	0.045	0.01
36	3.00	1.00	0.050	0.147	0.045	0.01
37	3.08	1.00	0.050	0.147	0.045	0.01
38	3.17	1.10	0.056	0.147	0.050	0.01
39	3.25	1.10	0.056	0.147	0.050	0.01
40	3.33	1.10	0.056	0.147	0.050	0.01
41	3.42	1.20	0.061	0.147	0.055	0.01
42	3.50	1.30	0.066	0.147	0.059	0.01
43	3.58	1.40	0.071	0.147	0.064	0.01
44	3.67	1.40	0.071	0.147	0.064	0.01
45	3.75	1.50	0.076	0.147	0.068	0.01
46	3.83	1.50	0.076	0.147	0.068	0.01
47	3.92	1.60	0.081	0.147	0.073	0.01
48	4.00	1.60	0.081	0.147	0.073	0.01
49	4.08	1.70	0.086	0.147	0.077	0.01
50	4.17	1.80	0.091	0.147	0.082	0.01
51	4.25	1.90	0.096	0.147	0.086	0.01
52	4.33	2.00	0.101	0.147	0.091	0.01
53	4.42	2.10	0.106	0.147	0.095	0.01
54	4.50	2.10	0.106	0.147	0.095	0.01
55	4.58	2.20	0.111	0.147	0.100	0.01
56	4.67	2.30	0.116	0.147	0.105	0.01
57	4.75	2.40	0.121	0.147	0.109	0.01
58	4.83	2.40	0.121	0.147	0.109	0.01
59	4.92	2.50	0.126	0.147	0.114	0.01
60	5.00	2.60	0.131	0.147	0.118	0.01
61	5.08	3.10	0.157	0.147	---	0.01
62	5.17	3.60	0.182	0.147	---	0.03
63	5.25	3.90	0.197	0.147	---	0.05
64	5.33	4.20	0.212	0.147	---	0.06
65	5.42	4.70	0.237	0.147	---	0.09
66	5.50	5.60	0.283	0.147	---	0.14
67	5.58	1.90	0.096	0.147	0.086	0.01
68	5.67	0.90	0.045	0.147	0.041	0.00
69	5.75	0.60	0.030	0.147	0.027	0.00
70	5.83	0.50	0.025	0.147	0.023	0.00
71	5.92	0.30	0.015	0.147	0.014	0.00
72	6.00	0.20	0.010	0.147	0.009	0.00
Sum =		100.0			Sum =	0.8

```
      Flood volume = Effective rainfall      0.06(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
      Total soil loss =      0.36(In)
      Total soil loss =     0.030(Ac.Ft)
      Total rainfall =      0.42(In)
      Flood volume =         233.0 Cubic Feet
      Total soil loss =        1309.7 Cubic Feet
----------------------------------------------------------------------
          Storm Event 2   Effective Rainfall =   0.797(In)
----------------------------------------------------------------------
```

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.048	0.147	0.043	0.00
2	0.17	0.60	0.057	0.147	0.052	0.01
3	0.25	0.60	0.057	0.147	0.052	0.01
4	0.33	0.60	0.057	0.147	0.052	0.01
5	0.42	0.60	0.057	0.147	0.052	0.01
6	0.50	0.70	0.067	0.147	0.060	0.01
7	0.58	0.70	0.067	0.147	0.060	0.01
8	0.67	0.70	0.067	0.147	0.060	0.01

9	0.75	0.70	0.067	0.147	0.060	0.01
10	0.83	0.70	0.067	0.147	0.060	0.01
11	0.92	0.70	0.067	0.147	0.060	0.01
12	1.00	0.80	0.077	0.147	0.069	0.01
13	1.08	0.80	0.077	0.147	0.069	0.01
14	1.17	0.80	0.077	0.147	0.069	0.01
15	1.25	0.80	0.077	0.147	0.069	0.01
16	1.33	0.80	0.077	0.147	0.069	0.01
17	1.42	0.80	0.077	0.147	0.069	0.01
18	1.50	0.80	0.077	0.147	0.069	0.01
19	1.58	0.80	0.077	0.147	0.069	0.01
20	1.67	0.80	0.077	0.147	0.069	0.01
21	1.75	0.80	0.077	0.147	0.069	0.01
22	1.83	0.80	0.077	0.147	0.069	0.01
23	1.92	0.80	0.077	0.147	0.069	0.01
24	2.00	0.90	0.086	0.147	0.077	0.01
25	2.08	0.80	0.077	0.147	0.069	0.01
26	2.17	0.90	0.086	0.147	0.077	0.01
27	2.25	0.90	0.086	0.147	0.077	0.01
28	2.33	0.90	0.086	0.147	0.077	0.01
29	2.42	0.90	0.086	0.147	0.077	0.01
30	2.50	0.90	0.086	0.147	0.077	0.01
31	2.58	0.90	0.086	0.147	0.077	0.01
32	2.67	0.90	0.086	0.147	0.077	0.01
33	2.75	1.00	0.096	0.147	0.086	0.01
34	2.83	1.00	0.096	0.147	0.086	0.01
35	2.92	1.00	0.096	0.147	0.086	0.01
36	3.00	1.00	0.096	0.147	0.086	0.01
37	3.08	1.00	0.096	0.147	0.086	0.01
38	3.17	1.10	0.105	0.147	0.095	0.01
39	3.25	1.10	0.105	0.147	0.095	0.01
40	3.33	1.10	0.105	0.147	0.095	0.01
41	3.42	1.20	0.115	0.147	0.103	0.01
42	3.50	1.30	0.124	0.147	0.112	0.01
43	3.58	1.40	0.134	0.147	0.121	0.01
44	3.67	1.40	0.134	0.147	0.121	0.01
45	3.75	1.50	0.144	0.147	0.129	0.01
46	3.83	1.50	0.144	0.147	0.129	0.01
47	3.92	1.60	0.153	0.147	---	0.01
48	4.00	1.60	0.153	0.147	---	0.01
49	4.08	1.70	0.163	0.147	---	0.02
50	4.17	1.80	0.172	0.147	---	0.03
51	4.25	1.90	0.182	0.147	---	0.03
52	4.33	2.00	0.191	0.147	---	0.04
53	4.42	2.10	0.201	0.147	---	0.05
54	4.50	2.10	0.201	0.147	---	0.05
55	4.58	2.20	0.210	0.147	---	0.06
56	4.67	2.30	0.220	0.147	---	0.07
57	4.75	2.40	0.230	0.147	---	0.08
58	4.83	2.40	0.230	0.147	---	0.08
59	4.92	2.50	0.239	0.147	---	0.09
60	5.00	2.60	0.249	0.147	---	0.10
61	5.08	3.10	0.297	0.147	---	0.15
62	5.17	3.60	0.344	0.147	---	0.20
63	5.25	3.90	0.373	0.147	---	0.23
64	5.33	4.20	0.402	0.147	---	0.25
65	5.42	4.70	0.450	0.147	---	0.30
66	5.50	5.60	0.536	0.147	---	0.39
67	5.58	1.90	0.182	0.147	---	0.03
68	5.67	0.90	0.086	0.147	0.077	0.01
69	5.75	0.60	0.057	0.147	0.052	0.01
70	5.83	0.50	0.048	0.147	0.043	0.00
71	5.92	0.30	0.029	0.147	0.026	0.00
72	6.00	0.20	0.019	0.147	0.017	0.00
Sum =		100.0			Sum =	2.7

```
Flood volume = Effective rainfall      0.23(In)
 times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
Total soil loss =      0.57(In)
Total soil loss =     0.048(Ac.Ft)
Total rainfall =      0.80(In)
Flood volume =         826.6 Cubic Feet
```

Total soil loss = 2096.4 Cubic Feet

Storm Event 1 Effective Rainfall = 2.215(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.133	0.147	0.120	0.01
2	0.17	0.60	0.159	0.147	---	0.01
3	0.25	0.60	0.159	0.147	---	0.01
4	0.33	0.60	0.159	0.147	---	0.01
5	0.42	0.60	0.159	0.147	---	0.01
6	0.50	0.70	0.186	0.147	---	0.04
7	0.58	0.70	0.186	0.147	---	0.04
8	0.67	0.70	0.186	0.147	---	0.04
9	0.75	0.70	0.186	0.147	---	0.04
10	0.83	0.70	0.186	0.147	---	0.04
11	0.92	0.70	0.186	0.147	---	0.04
12	1.00	0.80	0.213	0.147	---	0.07
13	1.08	0.80	0.213	0.147	---	0.07
14	1.17	0.80	0.213	0.147	---	0.07
15	1.25	0.80	0.213	0.147	---	0.07
16	1.33	0.80	0.213	0.147	---	0.07
17	1.42	0.80	0.213	0.147	---	0.07
18	1.50	0.80	0.213	0.147	---	0.07
19	1.58	0.80	0.213	0.147	---	0.07
20	1.67	0.80	0.213	0.147	---	0.07
21	1.75	0.80	0.213	0.147	---	0.07
22	1.83	0.80	0.213	0.147	---	0.07
23	1.92	0.80	0.213	0.147	---	0.07
24	2.00	0.90	0.239	0.147	---	0.09
25	2.08	0.80	0.213	0.147	---	0.07
26	2.17	0.90	0.239	0.147	---	0.09
27	2.25	0.90	0.239	0.147	---	0.09
28	2.33	0.90	0.239	0.147	---	0.09
29	2.42	0.90	0.239	0.147	---	0.09
30	2.50	0.90	0.239	0.147	---	0.09
31	2.58	0.90	0.239	0.147	---	0.09
32	2.67	0.90	0.239	0.147	---	0.09
33	2.75	1.00	0.266	0.147	---	0.12
34	2.83	1.00	0.266	0.147	---	0.12
35	2.92	1.00	0.266	0.147	---	0.12
36	3.00	1.00	0.266	0.147	---	0.12
37	3.08	1.00	0.266	0.147	---	0.12
38	3.17	1.10	0.292	0.147	---	0.15
39	3.25	1.10	0.292	0.147	---	0.15
40	3.33	1.10	0.292	0.147	---	0.15
41	3.42	1.20	0.319	0.147	---	0.17
42	3.50	1.30	0.345	0.147	---	0.20
43	3.58	1.40	0.372	0.147	---	0.22
44	3.67	1.40	0.372	0.147	---	0.22
45	3.75	1.50	0.399	0.147	---	0.25
46	3.83	1.50	0.399	0.147	---	0.25
47	3.92	1.60	0.425	0.147	---	0.28
48	4.00	1.60	0.425	0.147	---	0.28
49	4.08	1.70	0.452	0.147	---	0.30
50	4.17	1.80	0.478	0.147	---	0.33
51	4.25	1.90	0.505	0.147	---	0.36
52	4.33	2.00	0.531	0.147	---	0.38
53	4.42	2.10	0.558	0.147	---	0.41
54	4.50	2.10	0.558	0.147	---	0.41
55	4.58	2.20	0.585	0.147	---	0.44
56	4.67	2.30	0.611	0.147	---	0.46
57	4.75	2.40	0.638	0.147	---	0.49
58	4.83	2.40	0.638	0.147	---	0.49
59	4.92	2.50	0.664	0.147	---	0.52
60	5.00	2.60	0.691	0.147	---	0.54
61	5.08	3.10	0.824	0.147	---	0.68
62	5.17	3.60	0.957	0.147	---	0.81
63	5.25	3.90	1.036	0.147	---	0.89
64	5.33	4.20	1.116	0.147	---	0.97

```
65   5.42     4.70      1.249         0.147      ---          1.10
66   5.50     5.60      1.488         0.147      ---          1.34
67   5.58     1.90      0.505         0.147      ---          0.36
68   5.67     0.90      0.239         0.147      ---          0.09
69   5.75     0.60      0.159         0.147      ---          0.01
70   5.83     0.50      0.133         0.147     0.120         0.01
71   5.92     0.30      0.080         0.147     0.072         0.01
72   6.00     0.20      0.053         0.147     0.048         0.01
   Sum =     100.0                                     Sum =    16.2
      Flood volume = Effective rainfall      1.35(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      0.86(In)
      Total soil loss =     0.073(Ac.Ft)
      Total rainfall =      2.21(In)
      Flood volume =        4952.5 Cubic Feet
      Total soil loss =        3166.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      1.258(CFS)
      ---------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       6 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0000      0.00  Q         |         |         |         |
  0+20       0.0001      0.00  Q         |         |         |         |
  0+25       0.0001      0.00  Q         |         |         |         |
  0+30       0.0001      0.00  Q         |         |         |         |
  0+35       0.0001      0.00  Q         |         |         |         |
  0+40       0.0001      0.00  Q         |         |         |         |
  0+45       0.0002      0.00  Q         |         |         |         |
  0+50       0.0002      0.00  Q         |         |         |         |
  0+55       0.0002      0.00  Q         |         |         |         |
  1+ 0       0.0002      0.00  Q         |         |         |         |
  1+ 5       0.0002      0.00  Q         |         |         |         |
  1+10       0.0003      0.00  Q         |         |         |         |
  1+15       0.0003      0.00  Q         |         |         |         |
  1+20       0.0003      0.00  Q         |         |         |         |
  1+25       0.0003      0.00  Q         |         |         |         |
  1+30       0.0003      0.00  Q         |         |         |         |
  1+35       0.0004      0.00  Q         |         |         |         |
  1+40       0.0004      0.00  Q         |         |         |         |
  1+45       0.0004      0.00  Q         |         |         |         |
  1+50       0.0004      0.00  Q         |         |         |         |
  1+55       0.0005      0.00  Q         |         |         |         |
  2+ 0       0.0005      0.00  Q         |         |         |         |
  2+ 5       0.0005      0.00  Q         |         |         |         |
  2+10       0.0005      0.00  Q         |         |         |         |
  2+15       0.0006      0.00  Q         |         |         |         |
  2+20       0.0006      0.00  Q         |         |         |         |
  2+25       0.0006      0.00  Q         |         |         |         |
  2+30       0.0006      0.00  Q         |         |         |         |
  2+35       0.0007      0.00  Q         |         |         |         |
  2+40       0.0007      0.00  Q         |         |         |         |
  2+45       0.0007      0.00  Q         |         |         |         |
  2+50       0.0007      0.00  Q         |         |         |         |
  2+55       0.0008      0.00  Q         |         |         |         |
  3+ 0       0.0008      0.00  Q         |         |         |         |
  3+ 5       0.0008      0.00  Q         |         |         |         |
  3+10       0.0008      0.00  Q         |         |         |         |
  3+15       0.0009      0.00  Q         |         |         |         |
  3+20       0.0009      0.00  Q         |         |         |         |
  3+25       0.0009      0.00  Q         |         |         |         |
  3+30       0.0010      0.01  Q         |         |         |         |
  3+35       0.0010      0.01  Q         |         |         |         |
```

3+40	0.0011	0.01	Q	|	|	|	|
3+45	0.0011	0.01	Q	|	|	|	|
3+50	0.0011	0.01	Q	|	|	|	|
3+55	0.0012	0.01	Q	|	|	|	|
4+ 0	0.0012	0.01	Q	|	|	|	|
4+ 5	0.0013	0.01	Q	|	|	|	|
4+10	0.0013	0.01	Q	|	|	|	|
4+15	0.0014	0.01	Q	|	|	|	|
4+20	0.0014	0.01	Q	|	|	|	|
4+25	0.0015	0.01	Q	|	|	|	|
4+30	0.0015	0.01	Q	|	|	|	|
4+35	0.0016	0.01	Q	|	|	|	|
4+40	0.0017	0.01	Q	|	|	|	|
4+45	0.0017	0.01	Q	|	|	|	|
4+50	0.0018	0.01	Q	|	|	|	|
4+55	0.0019	0.01	Q	|	|	|	|
5+ 0	0.0019	0.01	Q	|	|	|	|
5+ 5	0.0020	0.01	Q	|	|	|	|
5+10	0.0021	0.01	Q	|	|	|	|
5+15	0.0022	0.01	Q	|	|	|	|
5+20	0.0023	0.02	Q	|	|	|	|
5+25	0.0025	0.03	Q	|	|	|	|
5+30	0.0029	0.06	Q	|	|	|	|
5+35	0.0032	0.03	Q	|	|	|	|
5+40	0.0032	0.01	Q	|	|	|	|
5+45	0.0033	0.00	Q	|	|	|	|
5+50	0.0033	0.00	Q	|	|	|	|
5+55	0.0033	0.00	Q	|	|	|	|
6+ 0	0.0033	0.00	Q	|	|	|	|
6+ 5	0.0033	0.00	Q	|	|	|	|
6+10	0.0033	0.00	Q	|	|	|	|
6+15	0.0033	0.00	Q	|	|	|	|
6+20	0.0034	0.00	Q	|	|	|	|
6+25	0.0034	0.00	Q	|	|	|	|
6+30	0.0034	0.00	Q	|	|	|	|
6+35	0.0034	0.00	Q	|	|	|	|
6+40	0.0035	0.00	Q	|	|	|	|
6+45	0.0035	0.00	Q	|	|	|	|
6+50	0.0035	0.00	Q	|	|	|	|
6+55	0.0035	0.00	QV	|	|	|	|
7+ 0	0.0036	0.00	QV	|	|	|	|
7+ 5	0.0036	0.00	QV	|	|	|	|
7+10	0.0036	0.00	QV	|	|	|	|
7+15	0.0036	0.00	QV	|	|	|	|
7+20	0.0037	0.00	QV	|	|	|	|
7+25	0.0037	0.00	QV	|	|	|	|
7+30	0.0037	0.00	QV	|	|	|	|
7+35	0.0038	0.00	QV	|	|	|	|
7+40	0.0038	0.00	QV	|	|	|	|
7+45	0.0038	0.00	QV	|	|	|	|
7+50	0.0038	0.00	QV	|	|	|	|
7+55	0.0039	0.00	QV	|	|	|	|
8+ 0	0.0039	0.00	QV	|	|	|	|
8+ 5	0.0039	0.00	QV	|	|	|	|
8+10	0.0040	0.00	QV	|	|	|	|
8+15	0.0040	0.00	QV	|	|	|	|
8+20	0.0040	0.00	QV	|	|	|	|
8+25	0.0041	0.00	QV	|	|	|	|
8+30	0.0041	0.00	QV	|	|	|	|
8+35	0.0041	0.00	QV	|	|	|	|
8+40	0.0042	0.00	QV	|	|	|	|
8+45	0.0042	0.00	QV	|	|	|	|
8+50	0.0042	0.01	QV	|	|	|	|
8+55	0.0043	0.01	QV	|	|	|	|
9+ 0	0.0043	0.01	QV	|	|	|	|
9+ 5	0.0043	0.01	QV	|	|	|	|
9+10	0.0044	0.01	QV	|	|	|	|
9+15	0.0044	0.01	QV	|	|	|	|
9+20	0.0044	0.01	QV	|	|	|	|
9+25	0.0045	0.01	QV	|	|	|	|
9+30	0.0045	0.01	QV	|	|	|	|

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 9+35       0.0046      0.01  QV        |          |          |          |
 9+40       0.0046      0.01  QV        |          |          |          |
 9+45       0.0047      0.01  QV        |          |          |          |
 9+50       0.0047      0.01  QV        |          |          |          |
 9+55       0.0048      0.01  QV        |          |          |          |
10+ 0       0.0048      0.01  QV        |          |          |          |
10+ 5       0.0049      0.01  QV        |          |          |          |
10+10       0.0050      0.01  QV        |          |          |          |
10+15       0.0050      0.01  QV        |          |          |          |
10+20       0.0051      0.01  QV        |          |          |          |
10+25       0.0052      0.01  QV        |          |          |          |
10+30       0.0052      0.01  QV        |          |          |          |
10+35       0.0053      0.01  QV        |          |          |          |
10+40       0.0054      0.01  QV        |          |          |          |
10+45       0.0055      0.01  QV        |          |          |          |
10+50       0.0056      0.01  QV        |          |          |          |
10+55       0.0057      0.01  QV        |          |          |          |
11+ 0       0.0057      0.01  QV        |          |          |          |
11+ 5       0.0058      0.01  QV        |          |          |          |
11+10       0.0060      0.02  QV        |          |          |          |
11+15       0.0063      0.04  QV        |          |          |          |
11+20       0.0067      0.06  QV        |          |          |          |
11+25       0.0073      0.08  Q V       |          |          |          |
11+30       0.0081      0.12  Q V       |          |          |          |
11+35       0.0085      0.06  Q V       |          |          |          |
11+40       0.0086      0.01  Q V       |          |          |          |
11+45       0.0086      0.00  Q V       |          |          |          |
11+50       0.0086      0.00  Q V       |          |          |          |
11+55       0.0086      0.00  Q V       |          |          |          |
12+ 0       0.0086      0.00  Q V       |          |          |          |
12+ 5       0.0087      0.00  Q V       |          |          |          |
12+10       0.0087      0.01  Q V       |          |          |          |
12+15       0.0087      0.01  Q V       |          |          |          |
12+20       0.0088      0.01  Q V       |          |          |          |
12+25       0.0088      0.01  Q V       |          |          |          |
12+30       0.0089      0.01  Q V       |          |          |          |
12+35       0.0089      0.01  Q V       |          |          |          |
12+40       0.0090      0.01  Q V       |          |          |          |
12+45       0.0090      0.01  Q V       |          |          |          |
12+50       0.0090      0.01  Q V       |          |          |          |
12+55       0.0091      0.01  Q V       |          |          |          |
13+ 0       0.0091      0.01  Q V       |          |          |          |
13+ 5       0.0092      0.01  Q V       |          |          |          |
13+10       0.0093      0.01  Q V       |          |          |          |
13+15       0.0093      0.01  Q V       |          |          |          |
13+20       0.0094      0.01  Q V       |          |          |          |
13+25       0.0094      0.01  Q V       |          |          |          |
13+30       0.0095      0.01  Q V       |          |          |          |
13+35       0.0095      0.01  Q V       |          |          |          |
13+40       0.0096      0.01  Q V       |          |          |          |
13+45       0.0096      0.01  Q V       |          |          |          |
13+50       0.0097      0.01  Q V       |          |          |          |
13+55       0.0097      0.01  Q V       |          |          |          |
14+ 0       0.0098      0.01  Q V       |          |          |          |
14+ 5       0.0098      0.01  Q V       |          |          |          |
14+10       0.0099      0.01  Q V       |          |          |          |
14+15       0.0100      0.01  Q V       |          |          |          |
14+20       0.0100      0.01  Q V       |          |          |          |
14+25       0.0101      0.01  Q V       |          |          |          |
14+30       0.0101      0.01  Q V       |          |          |          |
14+35       0.0102      0.01  Q V       |          |          |          |
14+40       0.0103      0.01  Q V       |          |          |          |
14+45       0.0103      0.01  Q V       |          |          |          |
14+50       0.0104      0.01  Q V       |          |          |          |
14+55       0.0105      0.01  Q V       |          |          |          |
15+ 0       0.0105      0.01  Q V       |          |          |          |
15+ 5       0.0106      0.01  Q  V      |          |          |          |
15+10       0.0107      0.01  Q  V      |          |          |          |
15+15       0.0107      0.01  Q  V      |          |          |          |
15+20       0.0108      0.01  Q  V      |          |          |          |
15+25       0.0109      0.01  Q  V      |          |          |          |
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15+30       0.0110      0.01  Q  V      |         |         |         |
15+35       0.0111      0.01  Q  V      |         |         |         |
15+40       0.0112      0.01  Q  V      |         |         |         |
15+45       0.0113      0.01  Q  V      |         |         |         |
15+50       0.0114      0.01  Q  V      |         |         |         |
15+55       0.0114      0.01  Q  V      |         |         |         |
16+ 0       0.0115      0.01  Q  V      |         |         |         |
16+ 5       0.0116      0.01  Q  V      |         |         |         |
16+10       0.0117      0.02  Q  V      |         |         |         |
16+15       0.0119      0.03  Q  V      |         |         |         |
16+20       0.0122      0.04  Q  V      |         |         |         |
16+25       0.0125      0.05  Q  V      |         |         |         |
16+30       0.0129      0.05  Q  V      |         |         |         |
16+35       0.0133      0.06  Q  V      |         |         |         |
16+40       0.0138      0.07  Q  V      |         |         |         |
16+45       0.0144      0.08  Q   V     |         |         |         |
16+50       0.0149      0.08  Q   V     |         |         |         |
16+55       0.0155      0.09  Q   V     |         |         |         |
17+ 0       0.0162      0.10  Q   V     |         |         |         |
17+ 5       0.0171      0.13  Q   V     |         |         |         |
17+10       0.0184      0.18  Q    V    |         |         |         |
17+15       0.0198      0.22  Q    V    |         |         |         |
17+20       0.0215      0.25  Q     V   |         |         |         |
17+25       0.0235      0.29  |Q    V   |         |         |         |
17+30       0.0260      0.36  |Q     V  |         |         |         |
17+35       0.0272      0.18  Q      V  |         |         |         |
17+40       0.0275      0.04  Q      V  |         |         |         |
17+45       0.0275      0.01  Q      V  |         |         |         |
17+50       0.0276      0.01  Q      V  |         |         |         |
17+55       0.0276      0.00  Q      V  |         |         |         |
18+ 0       0.0276      0.00  Q      V  |         |         |         |
18+ 5       0.0277      0.01  Q      V  |         |         |         |
18+10       0.0277      0.01  Q      V  |         |         |         |
18+15       0.0278      0.01  Q      V  |         |         |         |
18+20       0.0279      0.01  Q      V  |         |         |         |
18+25       0.0280      0.01  Q      V  |         |         |         |
18+30       0.0282      0.03  Q      V  |         |         |         |
18+35       0.0285      0.04  Q       V |         |         |         |
18+40       0.0287      0.04  Q       V |         |         |         |
18+45       0.0290      0.04  Q       V |         |         |         |
18+50       0.0293      0.04  Q       V |         |         |         |
18+55       0.0296      0.04  Q       V |         |         |         |
19+ 0       0.0299      0.06  Q       V |         |         |         |
19+ 5       0.0304      0.07  Q       V |         |         |         |
19+10       0.0308      0.07  Q       V |         |         |         |
19+15       0.0313      0.07  Q       V |         |         |         |
19+20       0.0318      0.07  Q       V |         |         |         |
19+25       0.0322      0.07  Q        V|         |         |         |
19+30       0.0327      0.07  Q        V|         |         |         |
19+35       0.0331      0.07  Q        V|         |         |         |
19+40       0.0336      0.07  Q        V|         |         |         |
19+45       0.0341      0.07  Q        V|         |         |         |
19+50       0.0345      0.07  Q        V|         |         |         |
19+55       0.0350      0.07  Q        V|         |
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       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: beaumontex2410.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

-------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



-------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
10 YEAR, 24 HOUR STORM
EXISTING CONDITION

------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     314.00(Ft.)
Length along longest watercourse measured to centroid =     160.00(Ft.)
Length along longest watercourse =      0.059 Mi.
Length along longest watercourse measured to centroid =      0.030 Mi.
Difference in elevation =       2.90(Ft.)
Slope along watercourse =     48.7643 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time =    0.026 Hr.
Lag time =     1.56 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.62 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.73                  2.76

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           6.52                  6.59

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    2.730(In)
Area Averaged 100-Year Rainfall =    6.520(In)

Point rain (area averaged) =    4.289(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.289(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           86.00         0.180
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.180	0.147	1.000	0.147
					Sum (F) =	0.147

Area averaged mean soil loss (F) (In/Hr) = 0.147
Minimum soil loss rate ((In/Hr)) = 0.074
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	320.782	58.717	0.598
2	0.167	641.564	36.014	0.367
3	0.250	962.346	5.268	0.054
		Sum = 100.000	Sum=	1.018

Storm Event 4 Effective Rainfall = 0.643(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.005	0.261	0.005	0.00
2	0.17	0.07	0.005	0.260	0.005	0.00
3	0.25	0.07	0.005	0.259	0.005	0.00
4	0.33	0.10	0.008	0.258	0.007	0.00
5	0.42	0.10	0.008	0.257	0.007	0.00
6	0.50	0.10	0.008	0.256	0.007	0.00
7	0.58	0.10	0.008	0.255	0.007	0.00
8	0.67	0.10	0.008	0.254	0.007	0.00
9	0.75	0.10	0.008	0.253	0.007	0.00
10	0.83	0.13	0.010	0.252	0.009	0.00
11	0.92	0.13	0.010	0.251	0.009	0.00
12	1.00	0.13	0.010	0.250	0.009	0.00
13	1.08	0.10	0.008	0.249	0.007	0.00
14	1.17	0.10	0.008	0.248	0.007	0.00
15	1.25	0.10	0.008	0.247	0.007	0.00
16	1.33	0.10	0.008	0.246	0.007	0.00
17	1.42	0.10	0.008	0.245	0.007	0.00
18	1.50	0.10	0.008	0.244	0.007	0.00
19	1.58	0.10	0.008	0.243	0.007	0.00
20	1.67	0.10	0.008	0.242	0.007	0.00
21	1.75	0.10	0.008	0.241	0.007	0.00
22	1.83	0.13	0.010	0.240	0.009	0.00
23	1.92	0.13	0.010	0.239	0.009	0.00
24	2.00	0.13	0.010	0.238	0.009	0.00
25	2.08	0.13	0.010	0.237	0.009	0.00
26	2.17	0.13	0.010	0.236	0.009	0.00
27	2.25	0.13	0.010	0.235	0.009	0.00
28	2.33	0.13	0.010	0.234	0.009	0.00
29	2.42	0.13	0.010	0.233	0.009	0.00
30	2.50	0.13	0.010	0.232	0.009	0.00
31	2.58	0.17	0.013	0.231	0.012	0.00
32	2.67	0.17	0.013	0.231	0.012	0.00
33	2.75	0.17	0.013	0.230	0.012	0.00
34	2.83	0.17	0.013	0.229	0.012	0.00
35	2.92	0.17	0.013	0.228	0.012	0.00
36	3.00	0.17	0.013	0.227	0.012	0.00
37	3.08	0.17	0.013	0.226	0.012	0.00
38	3.17	0.17	0.013	0.225	0.012	0.00

39	3.25	0.17	0.013	0.224	0.012	0.00
40	3.33	0.17	0.013	0.223	0.012	0.00
41	3.42	0.17	0.013	0.222	0.012	0.00
42	3.50	0.17	0.013	0.221	0.012	0.00
43	3.58	0.17	0.013	0.220	0.012	0.00
44	3.67	0.17	0.013	0.219	0.012	0.00
45	3.75	0.17	0.013	0.218	0.012	0.00
46	3.83	0.20	0.015	0.217	0.014	0.00
47	3.92	0.20	0.015	0.217	0.014	0.00
48	4.00	0.20	0.015	0.216	0.014	0.00
49	4.08	0.20	0.015	0.215	0.014	0.00
50	4.17	0.20	0.015	0.214	0.014	0.00
51	4.25	0.20	0.015	0.213	0.014	0.00
52	4.33	0.23	0.018	0.212	0.016	0.00
53	4.42	0.23	0.018	0.211	0.016	0.00
54	4.50	0.23	0.018	0.210	0.016	0.00
55	4.58	0.23	0.018	0.209	0.016	0.00
56	4.67	0.23	0.018	0.208	0.016	0.00
57	4.75	0.23	0.018	0.207	0.016	0.00
58	4.83	0.27	0.021	0.207	0.019	0.00
59	4.92	0.27	0.021	0.206	0.019	0.00
60	5.00	0.27	0.021	0.205	0.019	0.00
61	5.08	0.20	0.015	0.204	0.014	0.00
62	5.17	0.20	0.015	0.203	0.014	0.00
63	5.25	0.20	0.015	0.202	0.014	0.00
64	5.33	0.23	0.018	0.201	0.016	0.00
65	5.42	0.23	0.018	0.200	0.016	0.00
66	5.50	0.23	0.018	0.199	0.016	0.00
67	5.58	0.27	0.021	0.199	0.019	0.00
68	5.67	0.27	0.021	0.198	0.019	0.00
69	5.75	0.27	0.021	0.197	0.019	0.00
70	5.83	0.27	0.021	0.196	0.019	0.00
71	5.92	0.27	0.021	0.195	0.019	0.00
72	6.00	0.27	0.021	0.194	0.019	0.00
73	6.08	0.30	0.023	0.193	0.021	0.00
74	6.17	0.30	0.023	0.193	0.021	0.00
75	6.25	0.30	0.023	0.192	0.021	0.00
76	6.33	0.30	0.023	0.191	0.021	0.00
77	6.42	0.30	0.023	0.190	0.021	0.00
78	6.50	0.30	0.023	0.189	0.021	0.00
79	6.58	0.33	0.026	0.188	0.023	0.00
80	6.67	0.33	0.026	0.187	0.023	0.00
81	6.75	0.33	0.026	0.187	0.023	0.00
82	6.83	0.33	0.026	0.186	0.023	0.00
83	6.92	0.33	0.026	0.185	0.023	0.00
84	7.00	0.33	0.026	0.184	0.023	0.00
85	7.08	0.33	0.026	0.183	0.023	0.00
86	7.17	0.33	0.026	0.182	0.023	0.00
87	7.25	0.33	0.026	0.182	0.023	0.00
88	7.33	0.37	0.028	0.181	0.025	0.00
89	7.42	0.37	0.028	0.180	0.025	0.00
90	7.50	0.37	0.028	0.179	0.025	0.00
91	7.58	0.40	0.031	0.178	0.028	0.00
92	7.67	0.40	0.031	0.177	0.028	0.00
93	7.75	0.40	0.031	0.177	0.028	0.00
94	7.83	0.43	0.033	0.176	0.030	0.00
95	7.92	0.43	0.033	0.175	0.030	0.00
96	8.00	0.43	0.033	0.174	0.030	0.00
97	8.08	0.50	0.039	0.173	0.035	0.00
98	8.17	0.50	0.039	0.173	0.035	0.00
99	8.25	0.50	0.039	0.172	0.035	0.00
100	8.33	0.50	0.039	0.171	0.035	0.00
101	8.42	0.50	0.039	0.170	0.035	0.00
102	8.50	0.50	0.039	0.169	0.035	0.00
103	8.58	0.53	0.041	0.169	0.037	0.00
104	8.67	0.53	0.041	0.168	0.037	0.00
105	8.75	0.53	0.041	0.167	0.037	0.00
106	8.83	0.57	0.044	0.166	0.039	0.00
107	8.92	0.57	0.044	0.165	0.039	0.00
108	9.00	0.57	0.044	0.165	0.039	0.00
109	9.08	0.63	0.049	0.164	0.044	0.00

110	9.17	0.63	0.049	0.163	0.044	0.00
111	9.25	0.63	0.049	0.162	0.044	0.00
112	9.33	0.67	0.051	0.161	0.046	0.01
113	9.42	0.67	0.051	0.161	0.046	0.01
114	9.50	0.67	0.051	0.160	0.046	0.01
115	9.58	0.70	0.054	0.159	0.049	0.01
116	9.67	0.70	0.054	0.158	0.049	0.01
117	9.75	0.70	0.054	0.158	0.049	0.01
118	9.83	0.73	0.057	0.157	0.051	0.01
119	9.92	0.73	0.057	0.156	0.051	0.01
120	10.00	0.73	0.057	0.155	0.051	0.01
121	10.08	0.50	0.039	0.155	0.035	0.00
122	10.17	0.50	0.039	0.154	0.035	0.00
123	10.25	0.50	0.039	0.153	0.035	0.00
124	10.33	0.50	0.039	0.152	0.035	0.00
125	10.42	0.50	0.039	0.152	0.035	0.00
126	10.50	0.50	0.039	0.151	0.035	0.00
127	10.58	0.67	0.051	0.150	0.046	0.01
128	10.67	0.67	0.051	0.149	0.046	0.01
129	10.75	0.67	0.051	0.149	0.046	0.01
130	10.83	0.67	0.051	0.148	0.046	0.01
131	10.92	0.67	0.051	0.147	0.046	0.01
132	11.00	0.67	0.051	0.147	0.046	0.01
133	11.08	0.63	0.049	0.146	0.044	0.00
134	11.17	0.63	0.049	0.145	0.044	0.00
135	11.25	0.63	0.049	0.144	0.044	0.00
136	11.33	0.63	0.049	0.144	0.044	0.00
137	11.42	0.63	0.049	0.143	0.044	0.00
138	11.50	0.63	0.049	0.142	0.044	0.00
139	11.58	0.57	0.044	0.142	0.039	0.00
140	11.67	0.57	0.044	0.141	0.039	0.00
141	11.75	0.57	0.044	0.140	0.039	0.00
142	11.83	0.60	0.046	0.139	0.042	0.00
143	11.92	0.60	0.046	0.139	0.042	0.00
144	12.00	0.60	0.046	0.138	0.042	0.00
145	12.08	0.83	0.064	0.137	0.058	0.01
146	12.17	0.83	0.064	0.137	0.058	0.01
147	12.25	0.83	0.064	0.136	0.058	0.01
148	12.33	0.87	0.067	0.135	0.060	0.01
149	12.42	0.87	0.067	0.135	0.060	0.01
150	12.50	0.87	0.067	0.134	0.060	0.01
151	12.58	0.93	0.072	0.133	0.065	0.01
152	12.67	0.93	0.072	0.133	0.065	0.01
153	12.75	0.93	0.072	0.132	0.065	0.01
154	12.83	0.97	0.075	0.131	0.067	0.01
155	12.92	0.97	0.075	0.131	0.067	0.01
156	13.00	0.97	0.075	0.130	0.067	0.01
157	13.08	1.13	0.088	0.129	0.079	0.01
158	13.17	1.13	0.088	0.129	0.079	0.01
159	13.25	1.13	0.088	0.128	0.079	0.01
160	13.33	1.13	0.088	0.127	0.079	0.01
161	13.42	1.13	0.088	0.127	0.079	0.01
162	13.50	1.13	0.088	0.126	0.079	0.01
163	13.58	0.77	0.059	0.125	0.053	0.01
164	13.67	0.77	0.059	0.125	0.053	0.01
165	13.75	0.77	0.059	0.124	0.053	0.01
166	13.83	0.77	0.059	0.123	0.053	0.01
167	13.92	0.77	0.059	0.123	0.053	0.01
168	14.00	0.77	0.059	0.122	0.053	0.01
169	14.08	0.90	0.069	0.122	0.063	0.01
170	14.17	0.90	0.069	0.121	0.063	0.01
171	14.25	0.90	0.069	0.120	0.063	0.01
172	14.33	0.87	0.067	0.120	0.060	0.01
173	14.42	0.87	0.067	0.119	0.060	0.01
174	14.50	0.87	0.067	0.119	0.060	0.01
175	14.58	0.87	0.067	0.118	0.060	0.01
176	14.67	0.87	0.067	0.117	0.060	0.01
177	14.75	0.87	0.067	0.117	0.060	0.01
178	14.83	0.83	0.064	0.116	0.058	0.01
179	14.92	0.83	0.064	0.116	0.058	0.01
180	15.00	0.83	0.064	0.115	0.058	0.01

181	15.08	0.80	0.062	0.114	0.056	0.01
182	15.17	0.80	0.062	0.114	0.056	0.01
183	15.25	0.80	0.062	0.113	0.056	0.01
184	15.33	0.77	0.059	0.113	0.053	0.01
185	15.42	0.77	0.059	0.112	0.053	0.01
186	15.50	0.77	0.059	0.111	0.053	0.01
187	15.58	0.63	0.049	0.111	0.044	0.00
188	15.67	0.63	0.049	0.110	0.044	0.00
189	15.75	0.63	0.049	0.110	0.044	0.00
190	15.83	0.63	0.049	0.109	0.044	0.00
191	15.92	0.63	0.049	0.109	0.044	0.00
192	16.00	0.63	0.049	0.108	0.044	0.00
193	16.08	0.13	0.010	0.108	0.009	0.00
194	16.17	0.13	0.010	0.107	0.009	0.00
195	16.25	0.13	0.010	0.106	0.009	0.00
196	16.33	0.13	0.010	0.106	0.009	0.00
197	16.42	0.13	0.010	0.105	0.009	0.00
198	16.50	0.13	0.010	0.105	0.009	0.00
199	16.58	0.10	0.008	0.104	0.007	0.00
200	16.67	0.10	0.008	0.104	0.007	0.00
201	16.75	0.10	0.008	0.103	0.007	0.00
202	16.83	0.10	0.008	0.103	0.007	0.00
203	16.92	0.10	0.008	0.102	0.007	0.00
204	17.00	0.10	0.008	0.102	0.007	0.00
205	17.08	0.17	0.013	0.101	0.012	0.00
206	17.17	0.17	0.013	0.101	0.012	0.00
207	17.25	0.17	0.013	0.100	0.012	0.00
208	17.33	0.17	0.013	0.100	0.012	0.00
209	17.42	0.17	0.013	0.099	0.012	0.00
210	17.50	0.17	0.013	0.099	0.012	0.00
211	17.58	0.17	0.013	0.098	0.012	0.00
212	17.67	0.17	0.013	0.098	0.012	0.00
213	17.75	0.17	0.013	0.097	0.012	0.00
214	17.83	0.13	0.010	0.097	0.009	0.00
215	17.92	0.13	0.010	0.096	0.009	0.00
216	18.00	0.13	0.010	0.096	0.009	0.00
217	18.08	0.13	0.010	0.095	0.009	0.00
218	18.17	0.13	0.010	0.095	0.009	0.00
219	18.25	0.13	0.010	0.094	0.009	0.00
220	18.33	0.13	0.010	0.094	0.009	0.00
221	18.42	0.13	0.010	0.093	0.009	0.00
222	18.50	0.13	0.010	0.093	0.009	0.00
223	18.58	0.10	0.008	0.092	0.007	0.00
224	18.67	0.10	0.008	0.092	0.007	0.00
225	18.75	0.10	0.008	0.092	0.007	0.00
226	18.83	0.07	0.005	0.091	0.005	0.00
227	18.92	0.07	0.005	0.091	0.005	0.00
228	19.00	0.07	0.005	0.090	0.005	0.00
229	19.08	0.10	0.008	0.090	0.007	0.00
230	19.17	0.10	0.008	0.089	0.007	0.00
231	19.25	0.10	0.008	0.089	0.007	0.00
232	19.33	0.13	0.010	0.089	0.009	0.00
233	19.42	0.13	0.010	0.088	0.009	0.00
234	19.50	0.13	0.010	0.088	0.009	0.00
235	19.58	0.10	0.008	0.087	0.007	0.00
236	19.67	0.10	0.008	0.087	0.007	0.00
237	19.75	0.10	0.008	0.087	0.007	0.00
238	19.83	0.07	0.005	0.086	0.005	0.00
239	19.92	0.07	0.005	0.086	0.005	0.00
240	20.00	0.07	0.005	0.085	0.005	0.00
241	20.08	0.10	0.008	0.085	0.007	0.00
242	20.17	0.10	0.008	0.085	0.007	0.00
243	20.25	0.10	0.008	0.084	0.007	0.00
244	20.33	0.10	0.008	0.084	0.007	0.00
245	20.42	0.10	0.008	0.084	0.007	0.00
246	20.50	0.10	0.008	0.083	0.007	0.00
247	20.58	0.10	0.008	0.083	0.007	0.00
248	20.67	0.10	0.008	0.083	0.007	0.00
249	20.75	0.10	0.008	0.082	0.007	0.00
250	20.83	0.07	0.005	0.082	0.005	0.00
251	20.92	0.07	0.005	0.082	0.005	0.00

252	21.00	0.07	0.005	0.081	0.005	0.00
253	21.08	0.10	0.008	0.081	0.007	0.00
254	21.17	0.10	0.008	0.081	0.007	0.00
255	21.25	0.10	0.008	0.080	0.007	0.00
256	21.33	0.07	0.005	0.080	0.005	0.00
257	21.42	0.07	0.005	0.080	0.005	0.00
258	21.50	0.07	0.005	0.079	0.005	0.00
259	21.58	0.10	0.008	0.079	0.007	0.00
260	21.67	0.10	0.008	0.079	0.007	0.00
261	21.75	0.10	0.008	0.079	0.007	0.00
262	21.83	0.07	0.005	0.078	0.005	0.00
263	21.92	0.07	0.005	0.078	0.005	0.00
264	22.00	0.07	0.005	0.078	0.005	0.00
265	22.08	0.10	0.008	0.077	0.007	0.00
266	22.17	0.10	0.008	0.077	0.007	0.00
267	22.25	0.10	0.008	0.077	0.007	0.00
268	22.33	0.07	0.005	0.077	0.005	0.00
269	22.42	0.07	0.005	0.076	0.005	0.00
270	22.50	0.07	0.005	0.076	0.005	0.00
271	22.58	0.07	0.005	0.076	0.005	0.00
272	22.67	0.07	0.005	0.076	0.005	0.00
273	22.75	0.07	0.005	0.076	0.005	0.00
274	22.83	0.07	0.005	0.075	0.005	0.00
275	22.92	0.07	0.005	0.075	0.005	0.00
276	23.00	0.07	0.005	0.075	0.005	0.00
277	23.08	0.07	0.005	0.075	0.005	0.00
278	23.17	0.07	0.005	0.075	0.005	0.00
279	23.25	0.07	0.005	0.075	0.005	0.00
280	23.33	0.07	0.005	0.074	0.005	0.00
281	23.42	0.07	0.005	0.074	0.005	0.00
282	23.50	0.07	0.005	0.074	0.005	0.00
283	23.58	0.07	0.005	0.074	0.005	0.00
284	23.67	0.07	0.005	0.074	0.005	0.00
285	23.75	0.07	0.005	0.074	0.005	0.00
286	23.83	0.07	0.005	0.074	0.005	0.00
287	23.92	0.07	0.005	0.074	0.005	0.00
288	24.00	0.07	0.005	0.074	0.005	0.00

```
    Sum =     100.0                                    Sum =     0.8
       Flood volume = Effective rainfall      0.06(In)
        times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
       Total soil loss =      0.58(In)
       Total soil loss =     0.049(Ac.Ft)
       Total rainfall =      0.64(In)
       Flood volume =         235.9 Cubic Feet
       Total soil loss =        2123.0 Cubic Feet
----------------------------------------------------------------------
          Storm Event 3   Effective Rainfall =   0.815(In)
----------------------------------------------------------------------
```

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max |	Low	Effective (In/Hr)
1 0.08	0.07	0.007	0.261	0.006	0.00
2 0.17	0.07	0.007	0.260	0.006	0.00
3 0.25	0.07	0.007	0.259	0.006	0.00
4 0.33	0.10	0.010	0.258	0.009	0.00
5 0.42	0.10	0.010	0.257	0.009	0.00
6 0.50	0.10	0.010	0.256	0.009	0.00
7 0.58	0.10	0.010	0.255	0.009	0.00
8 0.67	0.10	0.010	0.254	0.009	0.00
9 0.75	0.10	0.010	0.253	0.009	0.00
10 0.83	0.13	0.013	0.252	0.012	0.00
11 0.92	0.13	0.013	0.251	0.012	0.00
12 1.00	0.13	0.013	0.250	0.012	0.00
13 1.08	0.10	0.010	0.249	0.009	0.00
14 1.17	0.10	0.010	0.248	0.009	0.00
15 1.25	0.10	0.010	0.247	0.009	0.00
16 1.33	0.10	0.010	0.246	0.009	0.00
17 1.42	0.10	0.010	0.245	0.009	0.00
18 1.50	0.10	0.010	0.244	0.009	0.00
19 1.58	0.10	0.010	0.243	0.009	0.00
20 1.67	0.10	0.010	0.242	0.009	0.00

21	1.75	0.10	0.010	0.241	0.009	0.00
22	1.83	0.13	0.013	0.240	0.012	0.00
23	1.92	0.13	0.013	0.239	0.012	0.00
24	2.00	0.13	0.013	0.238	0.012	0.00
25	2.08	0.13	0.013	0.237	0.012	0.00
26	2.17	0.13	0.013	0.236	0.012	0.00
27	2.25	0.13	0.013	0.235	0.012	0.00
28	2.33	0.13	0.013	0.234	0.012	0.00
29	2.42	0.13	0.013	0.233	0.012	0.00
30	2.50	0.13	0.013	0.232	0.012	0.00
31	2.58	0.17	0.016	0.231	0.015	0.00
32	2.67	0.17	0.016	0.231	0.015	0.00
33	2.75	0.17	0.016	0.230	0.015	0.00
34	2.83	0.17	0.016	0.229	0.015	0.00
35	2.92	0.17	0.016	0.228	0.015	0.00
36	3.00	0.17	0.016	0.227	0.015	0.00
37	3.08	0.17	0.016	0.226	0.015	0.00
38	3.17	0.17	0.016	0.225	0.015	0.00
39	3.25	0.17	0.016	0.224	0.015	0.00
40	3.33	0.17	0.016	0.223	0.015	0.00
41	3.42	0.17	0.016	0.222	0.015	0.00
42	3.50	0.17	0.016	0.221	0.015	0.00
43	3.58	0.17	0.016	0.220	0.015	0.00
44	3.67	0.17	0.016	0.219	0.015	0.00
45	3.75	0.17	0.016	0.218	0.015	0.00
46	3.83	0.20	0.020	0.217	0.018	0.00
47	3.92	0.20	0.020	0.217	0.018	0.00
48	4.00	0.20	0.020	0.216	0.018	0.00
49	4.08	0.20	0.020	0.215	0.018	0.00
50	4.17	0.20	0.020	0.214	0.018	0.00
51	4.25	0.20	0.020	0.213	0.018	0.00
52	4.33	0.23	0.023	0.212	0.021	0.00
53	4.42	0.23	0.023	0.211	0.021	0.00
54	4.50	0.23	0.023	0.210	0.021	0.00
55	4.58	0.23	0.023	0.209	0.021	0.00
56	4.67	0.23	0.023	0.208	0.021	0.00
57	4.75	0.23	0.023	0.207	0.021	0.00
58	4.83	0.27	0.026	0.207	0.023	0.00
59	4.92	0.27	0.026	0.206	0.023	0.00
60	5.00	0.27	0.026	0.205	0.023	0.00
61	5.08	0.20	0.020	0.204	0.018	0.00
62	5.17	0.20	0.020	0.203	0.018	0.00
63	5.25	0.20	0.020	0.202	0.018	0.00
64	5.33	0.23	0.023	0.201	0.021	0.00
65	5.42	0.23	0.023	0.200	0.021	0.00
66	5.50	0.23	0.023	0.199	0.021	0.00
67	5.58	0.27	0.026	0.199	0.023	0.00
68	5.67	0.27	0.026	0.198	0.023	0.00
69	5.75	0.27	0.026	0.197	0.023	0.00
70	5.83	0.27	0.026	0.196	0.023	0.00
71	5.92	0.27	0.026	0.195	0.023	0.00
72	6.00	0.27	0.026	0.194	0.023	0.00
73	6.08	0.30	0.029	0.193	0.026	0.00
74	6.17	0.30	0.029	0.193	0.026	0.00
75	6.25	0.30	0.029	0.192	0.026	0.00
76	6.33	0.30	0.029	0.191	0.026	0.00
77	6.42	0.30	0.029	0.190	0.026	0.00
78	6.50	0.30	0.029	0.189	0.026	0.00
79	6.58	0.33	0.033	0.188	0.029	0.00
80	6.67	0.33	0.033	0.187	0.029	0.00
81	6.75	0.33	0.033	0.187	0.029	0.00
82	6.83	0.33	0.033	0.186	0.029	0.00
83	6.92	0.33	0.033	0.185	0.029	0.00
84	7.00	0.33	0.033	0.184	0.029	0.00
85	7.08	0.33	0.033	0.183	0.029	0.00
86	7.17	0.33	0.033	0.182	0.029	0.00
87	7.25	0.33	0.033	0.182	0.029	0.00
88	7.33	0.37	0.036	0.181	0.032	0.00
89	7.42	0.37	0.036	0.180	0.032	0.00
90	7.50	0.37	0.036	0.179	0.032	0.00
91	7.58	0.40	0.039	0.178	0.035	0.00

92	7.67	0.40	0.039	0.177	0.035	0.00
93	7.75	0.40	0.039	0.177	0.035	0.00
94	7.83	0.43	0.042	0.176	0.038	0.00
95	7.92	0.43	0.042	0.175	0.038	0.00
96	8.00	0.43	0.042	0.174	0.038	0.00
97	8.08	0.50	0.049	0.173	0.044	0.00
98	8.17	0.50	0.049	0.173	0.044	0.00
99	8.25	0.50	0.049	0.172	0.044	0.00
100	8.33	0.50	0.049	0.171	0.044	0.00
101	8.42	0.50	0.049	0.170	0.044	0.00
102	8.50	0.50	0.049	0.169	0.044	0.00
103	8.58	0.53	0.052	0.169	0.047	0.01
104	8.67	0.53	0.052	0.168	0.047	0.01
105	8.75	0.53	0.052	0.167	0.047	0.01
106	8.83	0.57	0.055	0.166	0.050	0.01
107	8.92	0.57	0.055	0.165	0.050	0.01
108	9.00	0.57	0.055	0.165	0.050	0.01
109	9.08	0.63	0.062	0.164	0.056	0.01
110	9.17	0.63	0.062	0.163	0.056	0.01
111	9.25	0.63	0.062	0.162	0.056	0.01
112	9.33	0.67	0.065	0.161	0.059	0.01
113	9.42	0.67	0.065	0.161	0.059	0.01
114	9.50	0.67	0.065	0.160	0.059	0.01
115	9.58	0.70	0.068	0.159	0.062	0.01
116	9.67	0.70	0.068	0.158	0.062	0.01
117	9.75	0.70	0.068	0.158	0.062	0.01
118	9.83	0.73	0.072	0.157	0.065	0.01
119	9.92	0.73	0.072	0.156	0.065	0.01
120	10.00	0.73	0.072	0.155	0.065	0.01
121	10.08	0.50	0.049	0.155	0.044	0.00
122	10.17	0.50	0.049	0.154	0.044	0.00
123	10.25	0.50	0.049	0.153	0.044	0.00
124	10.33	0.50	0.049	0.152	0.044	0.00
125	10.42	0.50	0.049	0.152	0.044	0.00
126	10.50	0.50	0.049	0.151	0.044	0.00
127	10.58	0.67	0.065	0.150	0.059	0.01
128	10.67	0.67	0.065	0.149	0.059	0.01
129	10.75	0.67	0.065	0.149	0.059	0.01
130	10.83	0.67	0.065	0.148	0.059	0.01
131	10.92	0.67	0.065	0.147	0.059	0.01
132	11.00	0.67	0.065	0.147	0.059	0.01
133	11.08	0.63	0.062	0.146	0.056	0.01
134	11.17	0.63	0.062	0.145	0.056	0.01
135	11.25	0.63	0.062	0.144	0.056	0.01
136	11.33	0.63	0.062	0.144	0.056	0.01
137	11.42	0.63	0.062	0.143	0.056	0.01
138	11.50	0.63	0.062	0.142	0.056	0.01
139	11.58	0.57	0.055	0.142	0.050	0.01
140	11.67	0.57	0.055	0.141	0.050	0.01
141	11.75	0.57	0.055	0.140	0.050	0.01
142	11.83	0.60	0.059	0.139	0.053	0.01
143	11.92	0.60	0.059	0.139	0.053	0.01
144	12.00	0.60	0.059	0.138	0.053	0.01
145	12.08	0.83	0.081	0.137	0.073	0.01
146	12.17	0.83	0.081	0.137	0.073	0.01
147	12.25	0.83	0.081	0.136	0.073	0.01
148	12.33	0.87	0.085	0.135	0.076	0.01
149	12.42	0.87	0.085	0.135	0.076	0.01
150	12.50	0.87	0.085	0.134	0.076	0.01
151	12.58	0.93	0.091	0.133	0.082	0.01
152	12.67	0.93	0.091	0.133	0.082	0.01
153	12.75	0.93	0.091	0.132	0.082	0.01
154	12.83	0.97	0.095	0.131	0.085	0.01
155	12.92	0.97	0.095	0.131	0.085	0.01
156	13.00	0.97	0.095	0.130	0.085	0.01
157	13.08	1.13	0.111	0.129	0.100	0.01
158	13.17	1.13	0.111	0.129	0.100	0.01
159	13.25	1.13	0.111	0.128	0.100	0.01
160	13.33	1.13	0.111	0.127	0.100	0.01
161	13.42	1.13	0.111	0.127	0.100	0.01
162	13.50	1.13	0.111	0.126	0.100	0.01

163	13.58	0.77	0.075	0.125	0.067	0.01
164	13.67	0.77	0.075	0.125	0.067	0.01
165	13.75	0.77	0.075	0.124	0.067	0.01
166	13.83	0.77	0.075	0.123	0.067	0.01
167	13.92	0.77	0.075	0.123	0.067	0.01
168	14.00	0.77	0.075	0.122	0.067	0.01
169	14.08	0.90	0.088	0.122	0.079	0.01
170	14.17	0.90	0.088	0.121	0.079	0.01
171	14.25	0.90	0.088	0.120	0.079	0.01
172	14.33	0.87	0.085	0.120	0.076	0.01
173	14.42	0.87	0.085	0.119	0.076	0.01
174	14.50	0.87	0.085	0.119	0.076	0.01
175	14.58	0.87	0.085	0.118	0.076	0.01
176	14.67	0.87	0.085	0.117	0.076	0.01
177	14.75	0.87	0.085	0.117	0.076	0.01
178	14.83	0.83	0.081	0.116	0.073	0.01
179	14.92	0.83	0.081	0.116	0.073	0.01
180	15.00	0.83	0.081	0.115	0.073	0.01
181	15.08	0.80	0.078	0.114	0.070	0.01
182	15.17	0.80	0.078	0.114	0.070	0.01
183	15.25	0.80	0.078	0.113	0.070	0.01
184	15.33	0.77	0.075	0.113	0.067	0.01
185	15.42	0.77	0.075	0.112	0.067	0.01
186	15.50	0.77	0.075	0.111	0.067	0.01
187	15.58	0.63	0.062	0.111	0.056	0.01
188	15.67	0.63	0.062	0.110	0.056	0.01
189	15.75	0.63	0.062	0.110	0.056	0.01
190	15.83	0.63	0.062	0.109	0.056	0.01
191	15.92	0.63	0.062	0.109	0.056	0.01
192	16.00	0.63	0.062	0.108	0.056	0.01
193	16.08	0.13	0.013	0.108	0.012	0.00
194	16.17	0.13	0.013	0.107	0.012	0.00
195	16.25	0.13	0.013	0.106	0.012	0.00
196	16.33	0.13	0.013	0.106	0.012	0.00
197	16.42	0.13	0.013	0.105	0.012	0.00
198	16.50	0.13	0.013	0.105	0.012	0.00
199	16.58	0.10	0.010	0.104	0.009	0.00
200	16.67	0.10	0.010	0.104	0.009	0.00
201	16.75	0.10	0.010	0.103	0.009	0.00
202	16.83	0.10	0.010	0.103	0.009	0.00
203	16.92	0.10	0.010	0.102	0.009	0.00
204	17.00	0.10	0.010	0.102	0.009	0.00
205	17.08	0.17	0.016	0.101	0.015	0.00
206	17.17	0.17	0.016	0.101	0.015	0.00
207	17.25	0.17	0.016	0.100	0.015	0.00
208	17.33	0.17	0.016	0.100	0.015	0.00
209	17.42	0.17	0.016	0.099	0.015	0.00
210	17.50	0.17	0.016	0.099	0.015	0.00
211	17.58	0.17	0.016	0.098	0.015	0.00
212	17.67	0.17	0.016	0.098	0.015	0.00
213	17.75	0.17	0.016	0.097	0.015	0.00
214	17.83	0.13	0.013	0.097	0.012	0.00
215	17.92	0.13	0.013	0.096	0.012	0.00
216	18.00	0.13	0.013	0.096	0.012	0.00
217	18.08	0.13	0.013	0.095	0.012	0.00
218	18.17	0.13	0.013	0.095	0.012	0.00
219	18.25	0.13	0.013	0.094	0.012	0.00
220	18.33	0.13	0.013	0.094	0.012	0.00
221	18.42	0.13	0.013	0.093	0.012	0.00
222	18.50	0.13	0.013	0.093	0.012	0.00
223	18.58	0.10	0.010	0.092	0.009	0.00
224	18.67	0.10	0.010	0.092	0.009	0.00
225	18.75	0.10	0.010	0.092	0.009	0.00
226	18.83	0.07	0.007	0.091	0.006	0.00
227	18.92	0.07	0.007	0.091	0.006	0.00
228	19.00	0.07	0.007	0.090	0.006	0.00
229	19.08	0.10	0.010	0.090	0.009	0.00
230	19.17	0.10	0.010	0.089	0.009	0.00
231	19.25	0.10	0.010	0.089	0.009	0.00
232	19.33	0.13	0.013	0.089	0.012	0.00
233	19.42	0.13	0.013	0.088	0.012	0.00

234	19.50	0.13	0.013	0.088	0.012	0.00
235	19.58	0.10	0.010	0.087	0.009	0.00
236	19.67	0.10	0.010	0.087	0.009	0.00
237	19.75	0.10	0.010	0.087	0.009	0.00
238	19.83	0.07	0.007	0.086	0.006	0.00
239	19.92	0.07	0.007	0.086	0.006	0.00
240	20.00	0.07	0.007	0.085	0.006	0.00
241	20.08	0.10	0.010	0.085	0.009	0.00
242	20.17	0.10	0.010	0.085	0.009	0.00
243	20.25	0.10	0.010	0.084	0.009	0.00
244	20.33	0.10	0.010	0.084	0.009	0.00
245	20.42	0.10	0.010	0.084	0.009	0.00
246	20.50	0.10	0.010	0.083	0.009	0.00
247	20.58	0.10	0.010	0.083	0.009	0.00
248	20.67	0.10	0.010	0.083	0.009	0.00
249	20.75	0.10	0.010	0.082	0.009	0.00
250	20.83	0.07	0.007	0.082	0.006	0.00
251	20.92	0.07	0.007	0.082	0.006	0.00
252	21.00	0.07	0.007	0.081	0.006	0.00
253	21.08	0.10	0.010	0.081	0.009	0.00
254	21.17	0.10	0.010	0.081	0.009	0.00
255	21.25	0.10	0.010	0.080	0.009	0.00
256	21.33	0.07	0.007	0.080	0.006	0.00
257	21.42	0.07	0.007	0.080	0.006	0.00
258	21.50	0.07	0.007	0.079	0.006	0.00
259	21.58	0.10	0.010	0.079	0.009	0.00
260	21.67	0.10	0.010	0.079	0.009	0.00
261	21.75	0.10	0.010	0.079	0.009	0.00
262	21.83	0.07	0.007	0.078	0.006	0.00
263	21.92	0.07	0.007	0.078	0.006	0.00
264	22.00	0.07	0.007	0.078	0.006	0.00
265	22.08	0.10	0.010	0.077	0.009	0.00
266	22.17	0.10	0.010	0.077	0.009	0.00
267	22.25	0.10	0.010	0.077	0.009	0.00
268	22.33	0.07	0.007	0.077	0.006	0.00
269	22.42	0.07	0.007	0.076	0.006	0.00
270	22.50	0.07	0.007	0.076	0.006	0.00
271	22.58	0.07	0.007	0.076	0.006	0.00
272	22.67	0.07	0.007	0.076	0.006	0.00
273	22.75	0.07	0.007	0.076	0.006	0.00
274	22.83	0.07	0.007	0.075	0.006	0.00
275	22.92	0.07	0.007	0.075	0.006	0.00
276	23.00	0.07	0.007	0.075	0.006	0.00
277	23.08	0.07	0.007	0.075	0.006	0.00
278	23.17	0.07	0.007	0.075	0.006	0.00
279	23.25	0.07	0.007	0.075	0.006	0.00
280	23.33	0.07	0.007	0.074	0.006	0.00
281	23.42	0.07	0.007	0.074	0.006	0.00
282	23.50	0.07	0.007	0.074	0.006	0.00
283	23.58	0.07	0.007	0.074	0.006	0.00
284	23.67	0.07	0.007	0.074	0.006	0.00
285	23.75	0.07	0.007	0.074	0.006	0.00
286	23.83	0.07	0.007	0.074	0.006	0.00
287	23.92	0.07	0.007	0.074	0.006	0.00
288	24.00	0.07	0.007	0.074	0.006	0.00
	Sum =	100.0			Sum =	1.0

```
       Flood volume = Effective rainfall      0.08(In)
        times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
       Total soil loss =      0.73(In)
       Total soil loss =     0.062(Ac.Ft)
       Total rainfall =      0.81(In)
       Flood volume =         298.8 Cubic Feet
       Total soil loss =        2689.1 Cubic Feet
-----------------------------------------------------------------------
          Storm Event 2   Effective Rainfall =   1.544(In)
-----------------------------------------------------------------------
```

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.012	0.261	0.011	0.00
2	0.17	0.07	0.012	0.260	0.011	0.00

3	0.25	0.07	0.012	0.259	0.011	0.00
4	0.33	0.10	0.019	0.258	0.017	0.00
5	0.42	0.10	0.019	0.257	0.017	0.00
6	0.50	0.10	0.019	0.256	0.017	0.00
7	0.58	0.10	0.019	0.255	0.017	0.00
8	0.67	0.10	0.019	0.254	0.017	0.00
9	0.75	0.10	0.019	0.253	0.017	0.00
10	0.83	0.13	0.025	0.252	0.022	0.00
11	0.92	0.13	0.025	0.251	0.022	0.00
12	1.00	0.13	0.025	0.250	0.022	0.00
13	1.08	0.10	0.019	0.249	0.017	0.00
14	1.17	0.10	0.019	0.248	0.017	0.00
15	1.25	0.10	0.019	0.247	0.017	0.00
16	1.33	0.10	0.019	0.246	0.017	0.00
17	1.42	0.10	0.019	0.245	0.017	0.00
18	1.50	0.10	0.019	0.244	0.017	0.00
19	1.58	0.10	0.019	0.243	0.017	0.00
20	1.67	0.10	0.019	0.242	0.017	0.00
21	1.75	0.10	0.019	0.241	0.017	0.00
22	1.83	0.13	0.025	0.240	0.022	0.00
23	1.92	0.13	0.025	0.239	0.022	0.00
24	2.00	0.13	0.025	0.238	0.022	0.00
25	2.08	0.13	0.025	0.237	0.022	0.00
26	2.17	0.13	0.025	0.236	0.022	0.00
27	2.25	0.13	0.025	0.235	0.022	0.00
28	2.33	0.13	0.025	0.234	0.022	0.00
29	2.42	0.13	0.025	0.233	0.022	0.00
30	2.50	0.13	0.025	0.232	0.022	0.00
31	2.58	0.17	0.031	0.231	0.028	0.00
32	2.67	0.17	0.031	0.231	0.028	0.00
33	2.75	0.17	0.031	0.230	0.028	0.00
34	2.83	0.17	0.031	0.229	0.028	0.00
35	2.92	0.17	0.031	0.228	0.028	0.00
36	3.00	0.17	0.031	0.227	0.028	0.00
37	3.08	0.17	0.031	0.226	0.028	0.00
38	3.17	0.17	0.031	0.225	0.028	0.00
39	3.25	0.17	0.031	0.224	0.028	0.00
40	3.33	0.17	0.031	0.223	0.028	0.00
41	3.42	0.17	0.031	0.222	0.028	0.00
42	3.50	0.17	0.031	0.221	0.028	0.00
43	3.58	0.17	0.031	0.220	0.028	0.00
44	3.67	0.17	0.031	0.219	0.028	0.00
45	3.75	0.17	0.031	0.218	0.028	0.00
46	3.83	0.20	0.037	0.217	0.033	0.00
47	3.92	0.20	0.037	0.217	0.033	0.00
48	4.00	0.20	0.037	0.216	0.033	0.00
49	4.08	0.20	0.037	0.215	0.033	0.00
50	4.17	0.20	0.037	0.214	0.033	0.00
51	4.25	0.20	0.037	0.213	0.033	0.00
52	4.33	0.23	0.043	0.212	0.039	0.00
53	4.42	0.23	0.043	0.211	0.039	0.00
54	4.50	0.23	0.043	0.210	0.039	0.00
55	4.58	0.23	0.043	0.209	0.039	0.00
56	4.67	0.23	0.043	0.208	0.039	0.00
57	4.75	0.23	0.043	0.207	0.039	0.00
58	4.83	0.27	0.049	0.207	0.044	0.00
59	4.92	0.27	0.049	0.206	0.044	0.00
60	5.00	0.27	0.049	0.205	0.044	0.00
61	5.08	0.20	0.037	0.204	0.033	0.00
62	5.17	0.20	0.037	0.203	0.033	0.00
63	5.25	0.20	0.037	0.202	0.033	0.00
64	5.33	0.23	0.043	0.201	0.039	0.00
65	5.42	0.23	0.043	0.200	0.039	0.00
66	5.50	0.23	0.043	0.199	0.039	0.00
67	5.58	0.27	0.049	0.199	0.044	0.00
68	5.67	0.27	0.049	0.198	0.044	0.00
69	5.75	0.27	0.049	0.197	0.044	0.00
70	5.83	0.27	0.049	0.196	0.044	0.00
71	5.92	0.27	0.049	0.195	0.044	0.00
72	6.00	0.27	0.049	0.194	0.044	0.00
73	6.08	0.30	0.056	0.193	0.050	0.01

74	6.17	0.30	0.056	0.193	0.050	0.01
75	6.25	0.30	0.056	0.192	0.050	0.01
76	6.33	0.30	0.056	0.191	0.050	0.01
77	6.42	0.30	0.056	0.190	0.050	0.01
78	6.50	0.30	0.056	0.189	0.050	0.01
79	6.58	0.33	0.062	0.188	0.056	0.01
80	6.67	0.33	0.062	0.187	0.056	0.01
81	6.75	0.33	0.062	0.187	0.056	0.01
82	6.83	0.33	0.062	0.186	0.056	0.01
83	6.92	0.33	0.062	0.185	0.056	0.01
84	7.00	0.33	0.062	0.184	0.056	0.01
85	7.08	0.33	0.062	0.183	0.056	0.01
86	7.17	0.33	0.062	0.182	0.056	0.01
87	7.25	0.33	0.062	0.182	0.056	0.01
88	7.33	0.37	0.068	0.181	0.061	0.01
89	7.42	0.37	0.068	0.180	0.061	0.01
90	7.50	0.37	0.068	0.179	0.061	0.01
91	7.58	0.40	0.074	0.178	0.067	0.01
92	7.67	0.40	0.074	0.177	0.067	0.01
93	7.75	0.40	0.074	0.177	0.067	0.01
94	7.83	0.43	0.080	0.176	0.072	0.01
95	7.92	0.43	0.080	0.175	0.072	0.01
96	8.00	0.43	0.080	0.174	0.072	0.01
97	8.08	0.50	0.093	0.173	0.083	0.01
98	8.17	0.50	0.093	0.173	0.083	0.01
99	8.25	0.50	0.093	0.172	0.083	0.01
100	8.33	0.50	0.093	0.171	0.083	0.01
101	8.42	0.50	0.093	0.170	0.083	0.01
102	8.50	0.50	0.093	0.169	0.083	0.01
103	8.58	0.53	0.099	0.169	0.089	0.01
104	8.67	0.53	0.099	0.168	0.089	0.01
105	8.75	0.53	0.099	0.167	0.089	0.01
106	8.83	0.57	0.105	0.166	0.095	0.01
107	8.92	0.57	0.105	0.165	0.095	0.01
108	9.00	0.57	0.105	0.165	0.095	0.01
109	9.08	0.63	0.117	0.164	0.106	0.01
110	9.17	0.63	0.117	0.163	0.106	0.01
111	9.25	0.63	0.117	0.162	0.106	0.01
112	9.33	0.67	0.124	0.161	0.111	0.01
113	9.42	0.67	0.124	0.161	0.111	0.01
114	9.50	0.67	0.124	0.160	0.111	0.01
115	9.58	0.70	0.130	0.159	0.117	0.01
116	9.67	0.70	0.130	0.158	0.117	0.01
117	9.75	0.70	0.130	0.158	0.117	0.01
118	9.83	0.73	0.136	0.157	0.122	0.01
119	9.92	0.73	0.136	0.156	0.122	0.01
120	10.00	0.73	0.136	0.155	0.122	0.01
121	10.08	0.50	0.093	0.155	0.083	0.01
122	10.17	0.50	0.093	0.154	0.083	0.01
123	10.25	0.50	0.093	0.153	0.083	0.01
124	10.33	0.50	0.093	0.152	0.083	0.01
125	10.42	0.50	0.093	0.152	0.083	0.01
126	10.50	0.50	0.093	0.151	0.083	0.01
127	10.58	0.67	0.124	0.150	0.111	0.01
128	10.67	0.67	0.124	0.149	0.111	0.01
129	10.75	0.67	0.124	0.149	0.111	0.01
130	10.83	0.67	0.124	0.148	0.111	0.01
131	10.92	0.67	0.124	0.147	0.111	0.01
132	11.00	0.67	0.124	0.147	0.111	0.01
133	11.08	0.63	0.117	0.146	0.106	0.01
134	11.17	0.63	0.117	0.145	0.106	0.01
135	11.25	0.63	0.117	0.144	0.106	0.01
136	11.33	0.63	0.117	0.144	0.106	0.01
137	11.42	0.63	0.117	0.143	0.106	0.01
138	11.50	0.63	0.117	0.142	0.106	0.01
139	11.58	0.57	0.105	0.142	0.095	0.01
140	11.67	0.57	0.105	0.141	0.095	0.01
141	11.75	0.57	0.105	0.140	0.095	0.01
142	11.83	0.60	0.111	0.139	0.100	0.01
143	11.92	0.60	0.111	0.139	0.100	0.01
144	12.00	0.60	0.111	0.138	0.100	0.01

145	12.08	0.83	0.154	0.137	---	0.02
146	12.17	0.83	0.154	0.137	---	0.02
147	12.25	0.83	0.154	0.136	---	0.02
148	12.33	0.87	0.161	0.135	---	0.03
149	12.42	0.87	0.161	0.135	---	0.03
150	12.50	0.87	0.161	0.134	---	0.03
151	12.58	0.93	0.173	0.133	---	0.04
152	12.67	0.93	0.173	0.133	---	0.04
153	12.75	0.93	0.173	0.132	---	0.04
154	12.83	0.97	0.179	0.131	---	0.05
155	12.92	0.97	0.179	0.131	---	0.05
156	13.00	0.97	0.179	0.130	---	0.05
157	13.08	1.13	0.210	0.129	---	0.08
158	13.17	1.13	0.210	0.129	---	0.08
159	13.25	1.13	0.210	0.128	---	0.08
160	13.33	1.13	0.210	0.127	---	0.08
161	13.42	1.13	0.210	0.127	---	0.08
162	13.50	1.13	0.210	0.126	---	0.08
163	13.58	0.77	0.142	0.125	---	0.02
164	13.67	0.77	0.142	0.125	---	0.02
165	13.75	0.77	0.142	0.124	---	0.02
166	13.83	0.77	0.142	0.123	---	0.02
167	13.92	0.77	0.142	0.123	---	0.02
168	14.00	0.77	0.142	0.122	---	0.02
169	14.08	0.90	0.167	0.122	---	0.05
170	14.17	0.90	0.167	0.121	---	0.05
171	14.25	0.90	0.167	0.120	---	0.05
172	14.33	0.87	0.161	0.120	---	0.04
173	14.42	0.87	0.161	0.119	---	0.04
174	14.50	0.87	0.161	0.119	---	0.04
175	14.58	0.87	0.161	0.118	---	0.04
176	14.67	0.87	0.161	0.117	---	0.04
177	14.75	0.87	0.161	0.117	---	0.04
178	14.83	0.83	0.154	0.116	---	0.04
179	14.92	0.83	0.154	0.116	---	0.04
180	15.00	0.83	0.154	0.115	---	0.04
181	15.08	0.80	0.148	0.114	---	0.03
182	15.17	0.80	0.148	0.114	---	0.03
183	15.25	0.80	0.148	0.113	---	0.04
184	15.33	0.77	0.142	0.113	---	0.03
185	15.42	0.77	0.142	0.112	---	0.03
186	15.50	0.77	0.142	0.111	---	0.03
187	15.58	0.63	0.117	0.111	---	0.01
188	15.67	0.63	0.117	0.110	---	0.01
189	15.75	0.63	0.117	0.110	---	0.01
190	15.83	0.63	0.117	0.109	---	0.01
191	15.92	0.63	0.117	0.109	---	0.01
192	16.00	0.63	0.117	0.108	---	0.01
193	16.08	0.13	0.025	0.108	0.022	0.00
194	16.17	0.13	0.025	0.107	0.022	0.00
195	16.25	0.13	0.025	0.106	0.022	0.00
196	16.33	0.13	0.025	0.106	0.022	0.00
197	16.42	0.13	0.025	0.105	0.022	0.00
198	16.50	0.13	0.025	0.105	0.022	0.00
199	16.58	0.10	0.019	0.104	0.017	0.00
200	16.67	0.10	0.019	0.104	0.017	0.00
201	16.75	0.10	0.019	0.103	0.017	0.00
202	16.83	0.10	0.019	0.103	0.017	0.00
203	16.92	0.10	0.019	0.102	0.017	0.00
204	17.00	0.10	0.019	0.102	0.017	0.00
205	17.08	0.17	0.031	0.101	0.028	0.00
206	17.17	0.17	0.031	0.101	0.028	0.00
207	17.25	0.17	0.031	0.100	0.028	0.00
208	17.33	0.17	0.031	0.100	0.028	0.00
209	17.42	0.17	0.031	0.099	0.028	0.00
210	17.50	0.17	0.031	0.099	0.028	0.00
211	17.58	0.17	0.031	0.098	0.028	0.00
212	17.67	0.17	0.031	0.098	0.028	0.00
213	17.75	0.17	0.031	0.097	0.028	0.00
214	17.83	0.13	0.025	0.097	0.022	0.00
215	17.92	0.13	0.025	0.096	0.022	0.00

216	18.00	0.13	0.025	0.096	0.022	0.00
217	18.08	0.13	0.025	0.095	0.022	0.00
218	18.17	0.13	0.025	0.095	0.022	0.00
219	18.25	0.13	0.025	0.094	0.022	0.00
220	18.33	0.13	0.025	0.094	0.022	0.00
221	18.42	0.13	0.025	0.093	0.022	0.00
222	18.50	0.13	0.025	0.093	0.022	0.00
223	18.58	0.10	0.019	0.092	0.017	0.00
224	18.67	0.10	0.019	0.092	0.017	0.00
225	18.75	0.10	0.019	0.092	0.017	0.00
226	18.83	0.07	0.012	0.091	0.011	0.00
227	18.92	0.07	0.012	0.091	0.011	0.00
228	19.00	0.07	0.012	0.090	0.011	0.00
229	19.08	0.10	0.019	0.090	0.017	0.00
230	19.17	0.10	0.019	0.089	0.017	0.00
231	19.25	0.10	0.019	0.089	0.017	0.00
232	19.33	0.13	0.025	0.089	0.022	0.00
233	19.42	0.13	0.025	0.088	0.022	0.00
234	19.50	0.13	0.025	0.088	0.022	0.00
235	19.58	0.10	0.019	0.087	0.017	0.00
236	19.67	0.10	0.019	0.087	0.017	0.00
237	19.75	0.10	0.019	0.087	0.017	0.00
238	19.83	0.07	0.012	0.086	0.011	0.00
239	19.92	0.07	0.012	0.086	0.011	0.00
240	20.00	0.07	0.012	0.085	0.011	0.00
241	20.08	0.10	0.019	0.085	0.017	0.00
242	20.17	0.10	0.019	0.085	0.017	0.00
243	20.25	0.10	0.019	0.084	0.017	0.00
244	20.33	0.10	0.019	0.084	0.017	0.00
245	20.42	0.10	0.019	0.084	0.017	0.00
246	20.50	0.10	0.019	0.083	0.017	0.00
247	20.58	0.10	0.019	0.083	0.017	0.00
248	20.67	0.10	0.019	0.083	0.017	0.00
249	20.75	0.10	0.019	0.082	0.017	0.00
250	20.83	0.07	0.012	0.082	0.011	0.00
251	20.92	0.07	0.012	0.082	0.011	0.00
252	21.00	0.07	0.012	0.081	0.011	0.00
253	21.08	0.10	0.019	0.081	0.017	0.00
254	21.17	0.10	0.019	0.081	0.017	0.00
255	21.25	0.10	0.019	0.080	0.017	0.00
256	21.33	0.07	0.012	0.080	0.011	0.00
257	21.42	0.07	0.012	0.080	0.011	0.00
258	21.50	0.07	0.012	0.079	0.011	0.00
259	21.58	0.10	0.019	0.079	0.017	0.00
260	21.67	0.10	0.019	0.079	0.017	0.00
261	21.75	0.10	0.019	0.079	0.017	0.00
262	21.83	0.07	0.012	0.078	0.011	0.00
263	21.92	0.07	0.012	0.078	0.011	0.00
264	22.00	0.07	0.012	0.078	0.011	0.00
265	22.08	0.10	0.019	0.077	0.017	0.00
266	22.17	0.10	0.019	0.077	0.017	0.00
267	22.25	0.10	0.019	0.077	0.017	0.00
268	22.33	0.07	0.012	0.077	0.011	0.00
269	22.42	0.07	0.012	0.076	0.011	0.00
270	22.50	0.07	0.012	0.076	0.011	0.00
271	22.58	0.07	0.012	0.076	0.011	0.00
272	22.67	0.07	0.012	0.076	0.011	0.00
273	22.75	0.07	0.012	0.076	0.011	0.00
274	22.83	0.07	0.012	0.075	0.011	0.00
275	22.92	0.07	0.012	0.075	0.011	0.00
276	23.00	0.07	0.012	0.075	0.011	0.00
277	23.08	0.07	0.012	0.075	0.011	0.00
278	23.17	0.07	0.012	0.075	0.011	0.00
279	23.25	0.07	0.012	0.075	0.011	0.00
280	23.33	0.07	0.012	0.074	0.011	0.00
281	23.42	0.07	0.012	0.074	0.011	0.00
282	23.50	0.07	0.012	0.074	0.011	0.00
283	23.58	0.07	0.012	0.074	0.011	0.00
284	23.67	0.07	0.012	0.074	0.011	0.00
285	23.75	0.07	0.012	0.074	0.011	0.00
286	23.83	0.07	0.012	0.074	0.011	0.00

287	23.92	0.07	0.012	0.074	0.011	0.00
288	24.00	0.07	0.012	0.074	0.011	0.00
	Sum =	100.0			Sum =	2.8

Flood volume = Effective rainfall 0.24(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 1.31(In)
Total soil loss = 0.110(Ac.Ft)
Total rainfall = 1.54(In)
Flood volume = 868.2 Cubic Feet
Total soil loss = 4793.0 Cubic Feet

Storm Event 1 Effective Rainfall = 4.289(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.034	0.261	0.031	0.00
2	0.17	0.07	0.034	0.260	0.031	0.00
3	0.25	0.07	0.034	0.259	0.031	0.00
4	0.33	0.10	0.051	0.258	0.046	0.01
5	0.42	0.10	0.051	0.257	0.046	0.01
6	0.50	0.10	0.051	0.256	0.046	0.01
7	0.58	0.10	0.051	0.255	0.046	0.01
8	0.67	0.10	0.051	0.254	0.046	0.01
9	0.75	0.10	0.051	0.253	0.046	0.01
10	0.83	0.13	0.069	0.252	0.062	0.01
11	0.92	0.13	0.069	0.251	0.062	0.01
12	1.00	0.13	0.069	0.250	0.062	0.01
13	1.08	0.10	0.051	0.249	0.046	0.01
14	1.17	0.10	0.051	0.248	0.046	0.01
15	1.25	0.10	0.051	0.247	0.046	0.01
16	1.33	0.10	0.051	0.246	0.046	0.01
17	1.42	0.10	0.051	0.245	0.046	0.01
18	1.50	0.10	0.051	0.244	0.046	0.01
19	1.58	0.10	0.051	0.243	0.046	0.01
20	1.67	0.10	0.051	0.242	0.046	0.01
21	1.75	0.10	0.051	0.241	0.046	0.01
22	1.83	0.13	0.069	0.240	0.062	0.01
23	1.92	0.13	0.069	0.239	0.062	0.01
24	2.00	0.13	0.069	0.238	0.062	0.01
25	2.08	0.13	0.069	0.237	0.062	0.01
26	2.17	0.13	0.069	0.236	0.062	0.01
27	2.25	0.13	0.069	0.235	0.062	0.01
28	2.33	0.13	0.069	0.234	0.062	0.01
29	2.42	0.13	0.069	0.233	0.062	0.01
30	2.50	0.13	0.069	0.232	0.062	0.01
31	2.58	0.17	0.086	0.231	0.077	0.01
32	2.67	0.17	0.086	0.231	0.077	0.01
33	2.75	0.17	0.086	0.230	0.077	0.01
34	2.83	0.17	0.086	0.229	0.077	0.01
35	2.92	0.17	0.086	0.228	0.077	0.01
36	3.00	0.17	0.086	0.227	0.077	0.01
37	3.08	0.17	0.086	0.226	0.077	0.01
38	3.17	0.17	0.086	0.225	0.077	0.01
39	3.25	0.17	0.086	0.224	0.077	0.01
40	3.33	0.17	0.086	0.223	0.077	0.01
41	3.42	0.17	0.086	0.222	0.077	0.01
42	3.50	0.17	0.086	0.221	0.077	0.01
43	3.58	0.17	0.086	0.220	0.077	0.01
44	3.67	0.17	0.086	0.219	0.077	0.01
45	3.75	0.17	0.086	0.218	0.077	0.01
46	3.83	0.20	0.103	0.217	0.093	0.01
47	3.92	0.20	0.103	0.217	0.093	0.01
48	4.00	0.20	0.103	0.216	0.093	0.01
49	4.08	0.20	0.103	0.215	0.093	0.01
50	4.17	0.20	0.103	0.214	0.093	0.01
51	4.25	0.20	0.103	0.213	0.093	0.01
52	4.33	0.23	0.120	0.212	0.108	0.01
53	4.42	0.23	0.120	0.211	0.108	0.01
54	4.50	0.23	0.120	0.210	0.108	0.01
55	4.58	0.23	0.120	0.209	0.108	0.01

56	4.67	0.23	0.120	0.208	0.108	0.01
57	4.75	0.23	0.120	0.207	0.108	0.01
58	4.83	0.27	0.137	0.207	0.124	0.01
59	4.92	0.27	0.137	0.206	0.124	0.01
60	5.00	0.27	0.137	0.205	0.124	0.01
61	5.08	0.20	0.103	0.204	0.093	0.01
62	5.17	0.20	0.103	0.203	0.093	0.01
63	5.25	0.20	0.103	0.202	0.093	0.01
64	5.33	0.23	0.120	0.201	0.108	0.01
65	5.42	0.23	0.120	0.200	0.108	0.01
66	5.50	0.23	0.120	0.199	0.108	0.01
67	5.58	0.27	0.137	0.199	0.124	0.01
68	5.67	0.27	0.137	0.198	0.124	0.01
69	5.75	0.27	0.137	0.197	0.124	0.01
70	5.83	0.27	0.137	0.196	0.124	0.01
71	5.92	0.27	0.137	0.195	0.124	0.01
72	6.00	0.27	0.137	0.194	0.124	0.01
73	6.08	0.30	0.154	0.193	0.139	0.02
74	6.17	0.30	0.154	0.193	0.139	0.02
75	6.25	0.30	0.154	0.192	0.139	0.02
76	6.33	0.30	0.154	0.191	0.139	0.02
77	6.42	0.30	0.154	0.190	0.139	0.02
78	6.50	0.30	0.154	0.189	0.139	0.02
79	6.58	0.33	0.172	0.188	0.154	0.02
80	6.67	0.33	0.172	0.187	0.154	0.02
81	6.75	0.33	0.172	0.187	0.154	0.02
82	6.83	0.33	0.172	0.186	0.154	0.02
83	6.92	0.33	0.172	0.185	0.154	0.02
84	7.00	0.33	0.172	0.184	0.154	0.02
85	7.08	0.33	0.172	0.183	0.154	0.02
86	7.17	0.33	0.172	0.182	0.154	0.02
87	7.25	0.33	0.172	0.182	0.154	0.02
88	7.33	0.37	0.189	0.181	---	0.01
89	7.42	0.37	0.189	0.180	---	0.01
90	7.50	0.37	0.189	0.179	---	0.01
91	7.58	0.40	0.206	0.178	---	0.03
92	7.67	0.40	0.206	0.177	---	0.03
93	7.75	0.40	0.206	0.177	---	0.03
94	7.83	0.43	0.223	0.176	---	0.05
95	7.92	0.43	0.223	0.175	---	0.05
96	8.00	0.43	0.223	0.174	---	0.05
97	8.08	0.50	0.257	0.173	---	0.08
98	8.17	0.50	0.257	0.173	---	0.08
99	8.25	0.50	0.257	0.172	---	0.09
100	8.33	0.50	0.257	0.171	---	0.09
101	8.42	0.50	0.257	0.170	---	0.09
102	8.50	0.50	0.257	0.169	---	0.09
103	8.58	0.53	0.275	0.169	---	0.11
104	8.67	0.53	0.275	0.168	---	0.11
105	8.75	0.53	0.275	0.167	---	0.11
106	8.83	0.57	0.292	0.166	---	0.13
107	8.92	0.57	0.292	0.165	---	0.13
108	9.00	0.57	0.292	0.165	---	0.13
109	9.08	0.63	0.326	0.164	---	0.16
110	9.17	0.63	0.326	0.163	---	0.16
111	9.25	0.63	0.326	0.162	---	0.16
112	9.33	0.67	0.343	0.161	---	0.18
113	9.42	0.67	0.343	0.161	---	0.18
114	9.50	0.67	0.343	0.160	---	0.18
115	9.58	0.70	0.360	0.159	---	0.20
116	9.67	0.70	0.360	0.158	---	0.20
117	9.75	0.70	0.360	0.158	---	0.20
118	9.83	0.73	0.377	0.157	---	0.22
119	9.92	0.73	0.377	0.156	---	0.22
120	10.00	0.73	0.377	0.155	---	0.22
121	10.08	0.50	0.257	0.155	---	0.10
122	10.17	0.50	0.257	0.154	---	0.10
123	10.25	0.50	0.257	0.153	---	0.10
124	10.33	0.50	0.257	0.152	---	0.10
125	10.42	0.50	0.257	0.152	---	0.11
126	10.50	0.50	0.257	0.151	---	0.11

127	10.58	0.67	0.343	0.150	---	0.19
128	10.67	0.67	0.343	0.149	---	0.19
129	10.75	0.67	0.343	0.149	---	0.19
130	10.83	0.67	0.343	0.148	---	0.20
131	10.92	0.67	0.343	0.147	---	0.20
132	11.00	0.67	0.343	0.147	---	0.20
133	11.08	0.63	0.326	0.146	---	0.18
134	11.17	0.63	0.326	0.145	---	0.18
135	11.25	0.63	0.326	0.144	---	0.18
136	11.33	0.63	0.326	0.144	---	0.18
137	11.42	0.63	0.326	0.143	---	0.18
138	11.50	0.63	0.326	0.142	---	0.18
139	11.58	0.57	0.292	0.142	---	0.15
140	11.67	0.57	0.292	0.141	---	0.15
141	11.75	0.57	0.292	0.140	---	0.15
142	11.83	0.60	0.309	0.139	---	0.17
143	11.92	0.60	0.309	0.139	---	0.17
144	12.00	0.60	0.309	0.138	---	0.17
145	12.08	0.83	0.429	0.137	---	0.29
146	12.17	0.83	0.429	0.137	---	0.29
147	12.25	0.83	0.429	0.136	---	0.29
148	12.33	0.87	0.446	0.135	---	0.31
149	12.42	0.87	0.446	0.135	---	0.31
150	12.50	0.87	0.446	0.134	---	0.31
151	12.58	0.93	0.480	0.133	---	0.35
152	12.67	0.93	0.480	0.133	---	0.35
153	12.75	0.93	0.480	0.132	---	0.35
154	12.83	0.97	0.498	0.131	---	0.37
155	12.92	0.97	0.498	0.131	---	0.37
156	13.00	0.97	0.498	0.130	---	0.37
157	13.08	1.13	0.583	0.129	---	0.45
158	13.17	1.13	0.583	0.129	---	0.45
159	13.25	1.13	0.583	0.128	---	0.46
160	13.33	1.13	0.583	0.127	---	0.46
161	13.42	1.13	0.583	0.127	---	0.46
162	13.50	1.13	0.583	0.126	---	0.46
163	13.58	0.77	0.395	0.125	---	0.27
164	13.67	0.77	0.395	0.125	---	0.27
165	13.75	0.77	0.395	0.124	---	0.27
166	13.83	0.77	0.395	0.123	---	0.27
167	13.92	0.77	0.395	0.123	---	0.27
168	14.00	0.77	0.395	0.122	---	0.27
169	14.08	0.90	0.463	0.122	---	0.34
170	14.17	0.90	0.463	0.121	---	0.34
171	14.25	0.90	0.463	0.120	---	0.34
172	14.33	0.87	0.446	0.120	---	0.33
173	14.42	0.87	0.446	0.119	---	0.33
174	14.50	0.87	0.446	0.119	---	0.33
175	14.58	0.87	0.446	0.118	---	0.33
176	14.67	0.87	0.446	0.117	---	0.33
177	14.75	0.87	0.446	0.117	---	0.33
178	14.83	0.83	0.429	0.116	---	0.31
179	14.92	0.83	0.429	0.116	---	0.31
180	15.00	0.83	0.429	0.115	---	0.31
181	15.08	0.80	0.412	0.114	---	0.30
182	15.17	0.80	0.412	0.114	---	0.30
183	15.25	0.80	0.412	0.113	---	0.30
184	15.33	0.77	0.395	0.113	---	0.28
185	15.42	0.77	0.395	0.112	---	0.28
186	15.50	0.77	0.395	0.111	---	0.28
187	15.58	0.63	0.326	0.111	---	0.22
188	15.67	0.63	0.326	0.110	---	0.22
189	15.75	0.63	0.326	0.110	---	0.22
190	15.83	0.63	0.326	0.109	---	0.22
191	15.92	0.63	0.326	0.109	---	0.22
192	16.00	0.63	0.326	0.108	---	0.22
193	16.08	0.13	0.069	0.108	0.062	0.01
194	16.17	0.13	0.069	0.107	0.062	0.01
195	16.25	0.13	0.069	0.106	0.062	0.01
196	16.33	0.13	0.069	0.106	0.062	0.01
197	16.42	0.13	0.069	0.105	0.062	0.01

198	16.50	0.13	0.069	0.105	0.062	0.01
199	16.58	0.10	0.051	0.104	0.046	0.01
200	16.67	0.10	0.051	0.104	0.046	0.01
201	16.75	0.10	0.051	0.103	0.046	0.01
202	16.83	0.10	0.051	0.103	0.046	0.01
203	16.92	0.10	0.051	0.102	0.046	0.01
204	17.00	0.10	0.051	0.102	0.046	0.01
205	17.08	0.17	0.086	0.101	0.077	0.01
206	17.17	0.17	0.086	0.101	0.077	0.01
207	17.25	0.17	0.086	0.100	0.077	0.01
208	17.33	0.17	0.086	0.100	0.077	0.01
209	17.42	0.17	0.086	0.099	0.077	0.01
210	17.50	0.17	0.086	0.099	0.077	0.01
211	17.58	0.17	0.086	0.098	0.077	0.01
212	17.67	0.17	0.086	0.098	0.077	0.01
213	17.75	0.17	0.086	0.097	0.077	0.01
214	17.83	0.13	0.069	0.097	0.062	0.01
215	17.92	0.13	0.069	0.096	0.062	0.01
216	18.00	0.13	0.069	0.096	0.062	0.01
217	18.08	0.13	0.069	0.095	0.062	0.01
218	18.17	0.13	0.069	0.095	0.062	0.01
219	18.25	0.13	0.069	0.094	0.062	0.01
220	18.33	0.13	0.069	0.094	0.062	0.01
221	18.42	0.13	0.069	0.093	0.062	0.01
222	18.50	0.13	0.069	0.093	0.062	0.01
223	18.58	0.10	0.051	0.092	0.046	0.01
224	18.67	0.10	0.051	0.092	0.046	0.01
225	18.75	0.10	0.051	0.092	0.046	0.01
226	18.83	0.07	0.034	0.091	0.031	0.00
227	18.92	0.07	0.034	0.091	0.031	0.00
228	19.00	0.07	0.034	0.090	0.031	0.00
229	19.08	0.10	0.051	0.090	0.046	0.01
230	19.17	0.10	0.051	0.089	0.046	0.01
231	19.25	0.10	0.051	0.089	0.046	0.01
232	19.33	0.13	0.069	0.089	0.062	0.01
233	19.42	0.13	0.069	0.088	0.062	0.01
234	19.50	0.13	0.069	0.088	0.062	0.01
235	19.58	0.10	0.051	0.087	0.046	0.01
236	19.67	0.10	0.051	0.087	0.046	0.01
237	19.75	0.10	0.051	0.087	0.046	0.01
238	19.83	0.07	0.034	0.086	0.031	0.00
239	19.92	0.07	0.034	0.086	0.031	0.00
240	20.00	0.07	0.034	0.085	0.031	0.00
241	20.08	0.10	0.051	0.085	0.046	0.01
242	20.17	0.10	0.051	0.085	0.046	0.01
243	20.25	0.10	0.051	0.084	0.046	0.01
244	20.33	0.10	0.051	0.084	0.046	0.01
245	20.42	0.10	0.051	0.084	0.046	0.01
246	20.50	0.10	0.051	0.083	0.046	0.01
247	20.58	0.10	0.051	0.083	0.046	0.01
248	20.67	0.10	0.051	0.083	0.046	0.01
249	20.75	0.10	0.051	0.082	0.046	0.01
250	20.83	0.07	0.034	0.082	0.031	0.00
251	20.92	0.07	0.034	0.082	0.031	0.00
252	21.00	0.07	0.034	0.081	0.031	0.00
253	21.08	0.10	0.051	0.081	0.046	0.01
254	21.17	0.10	0.051	0.081	0.046	0.01
255	21.25	0.10	0.051	0.080	0.046	0.01
256	21.33	0.07	0.034	0.080	0.031	0.00
257	21.42	0.07	0.034	0.080	0.031	0.00
258	21.50	0.07	0.034	0.079	0.031	0.00
259	21.58	0.10	0.051	0.079	0.046	0.01
260	21.67	0.10	0.051	0.079	0.046	0.01
261	21.75	0.10	0.051	0.079	0.046	0.01
262	21.83	0.07	0.034	0.078	0.031	0.00
263	21.92	0.07	0.034	0.078	0.031	0.00
264	22.00	0.07	0.034	0.078	0.031	0.00
265	22.08	0.10	0.051	0.077	0.046	0.01
266	22.17	0.10	0.051	0.077	0.046	0.01
267	22.25	0.10	0.051	0.077	0.046	0.01
268	22.33	0.07	0.034	0.077	0.031	0.00

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269  22.42     0.07      0.034         0.076     0.031         0.00
270  22.50     0.07      0.034         0.076     0.031         0.00
271  22.58     0.07      0.034         0.076     0.031         0.00
272  22.67     0.07      0.034         0.076     0.031         0.00
273  22.75     0.07      0.034         0.076     0.031         0.00
274  22.83     0.07      0.034         0.075     0.031         0.00
275  22.92     0.07      0.034         0.075     0.031         0.00
276  23.00     0.07      0.034         0.075     0.031         0.00
277  23.08     0.07      0.034         0.075     0.031         0.00
278  23.17     0.07      0.034         0.075     0.031         0.00
279  23.25     0.07      0.034         0.075     0.031         0.00
280  23.33     0.07      0.034         0.074     0.031         0.00
281  23.42     0.07      0.034         0.074     0.031         0.00
282  23.50     0.07      0.034         0.074     0.031         0.00
283  23.58     0.07      0.034         0.074     0.031         0.00
284  23.67     0.07      0.034         0.074     0.031         0.00
285  23.75     0.07      0.034         0.074     0.031         0.00
286  23.83     0.07      0.034         0.074     0.031         0.00
287  23.92     0.07      0.034         0.074     0.031         0.00
288  24.00     0.07      0.034         0.074     0.031         0.00
    Sum =     100.0                                   Sum =    24.3
      Flood volume = Effective rainfall      2.02(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      2.27(In)
      Total soil loss =     0.191(Ac.Ft)
      Total rainfall =      4.29(In)
      Flood volume =        7418.4 Cubic Feet
      Total soil loss =        8307.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.465(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       24 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0000      0.00  Q         |         |         |         |
   0+15       0.0000      0.00  Q         |         |         |         |
   0+20       0.0000      0.00  Q         |         |         |         |
   0+25       0.0000      0.00  Q         |         |         |         |
   0+30       0.0000      0.00  Q         |         |         |         |
   0+35       0.0000      0.00  Q         |         |         |         |
   0+40       0.0000      0.00  Q         |         |         |         |
   0+45       0.0000      0.00  Q         |         |         |         |
   0+50       0.0000      0.00  Q         |         |         |         |
   0+55       0.0001      0.00  Q         |         |         |         |
   1+ 0       0.0001      0.00  Q         |         |         |         |
   1+ 5       0.0001      0.00  Q         |         |         |         |
   1+10       0.0001      0.00  Q         |         |         |         |
   1+15       0.0001      0.00  Q         |         |         |         |
   1+20       0.0001      0.00  Q         |         |         |         |
   1+25       0.0001      0.00  Q         |         |         |         |
   1+30       0.0001      0.00  Q         |         |         |         |
   1+35       0.0001      0.00  Q         |         |         |         |
   1+40       0.0001      0.00  Q         |         |         |         |
   1+45       0.0001      0.00  Q         |         |         |         |
   1+50       0.0001      0.00  Q         |         |         |         |
   1+55       0.0001      0.00  Q         |         |         |         |
   2+ 0       0.0001      0.00  Q         |         |         |         |
   2+ 5       0.0001      0.00  Q         |         |         |         |
   2+10       0.0001      0.00  Q         |         |         |         |
   2+15       0.0002      0.00  Q         |         |         |         |
   2+20       0.0002      0.00  Q         |         |         |         |
   2+25       0.0002      0.00  Q         |         |         |         |
   2+30       0.0002      0.00  Q         |         |         |         |
   2+35       0.0002      0.00  Q         |         |         |         |
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2+40	0.0002	0.00	Q	|	|	|	|
2+45	0.0002	0.00	Q	|	|	|	|
2+50	0.0002	0.00	Q	|	|	|	|
2+55	0.0002	0.00	Q	|	|	|	|
3+ 0	0.0002	0.00	Q	|	|	|	|
3+ 5	0.0002	0.00	Q	|	|	|	|
3+10	0.0002	0.00	Q	|	|	|	|
3+15	0.0003	0.00	Q	|	|	|	|
3+20	0.0003	0.00	Q	|	|	|	|
3+25	0.0003	0.00	Q	|	|	|	|
3+30	0.0003	0.00	Q	|	|	|	|
3+35	0.0003	0.00	Q	|	|	|	|
3+40	0.0003	0.00	Q	|	|	|	|
3+45	0.0003	0.00	Q	|	|	|	|
3+50	0.0003	0.00	Q	|	|	|	|
3+55	0.0003	0.00	Q	|	|	|	|
4+ 0	0.0003	0.00	Q	|	|	|	|
4+ 5	0.0004	0.00	Q	|	|	|	|
4+10	0.0004	0.00	Q	|	|	|	|
4+15	0.0004	0.00	Q	|	|	|	|
4+20	0.0004	0.00	Q	|	|	|	|
4+25	0.0004	0.00	Q	|	|	|	|
4+30	0.0004	0.00	Q	|	|	|	|
4+35	0.0004	0.00	Q	|	|	|	|
4+40	0.0004	0.00	Q	|	|	|	|
4+45	0.0004	0.00	Q	|	|	|	|
4+50	0.0005	0.00	Q	|	|	|	|
4+55	0.0005	0.00	Q	|	|	|	|
5+ 0	0.0005	0.00	Q	|	|	|	|
5+ 5	0.0005	0.00	Q	|	|	|	|
5+10	0.0005	0.00	Q	|	|	|	|
5+15	0.0005	0.00	Q	|	|	|	|
5+20	0.0005	0.00	Q	|	|	|	|
5+25	0.0006	0.00	Q	|	|	|	|
5+30	0.0006	0.00	Q	|	|	|	|
5+35	0.0006	0.00	Q	|	|	|	|
5+40	0.0006	0.00	Q	|	|	|	|
5+45	0.0006	0.00	Q	|	|	|	|
5+50	0.0006	0.00	Q	|	|	|	|
5+55	0.0006	0.00	Q	|	|	|	|
6+ 0	0.0006	0.00	Q	|	|	|	|
6+ 5	0.0007	0.00	Q	|	|	|	|
6+10	0.0007	0.00	Q	|	|	|	|
6+15	0.0007	0.00	Q	|	|	|	|
6+20	0.0007	0.00	Q	|	|	|	|
6+25	0.0007	0.00	Q	|	|	|	|
6+30	0.0007	0.00	Q	|	|	|	|
6+35	0.0008	0.00	Q	|	|	|	|
6+40	0.0008	0.00	Q	|	|	|	|
6+45	0.0008	0.00	Q	|	|	|	|
6+50	0.0008	0.00	Q	|	|	|	|
6+55	0.0008	0.00	Q	|	|	|	|
7+ 0	0.0009	0.00	Q	|	|	|	|
7+ 5	0.0009	0.00	Q	|	|	|	|
7+10	0.0009	0.00	Q	|	|	|	|
7+15	0.0009	0.00	Q	|	|	|	|
7+20	0.0009	0.00	Q	|	|	|	|
7+25	0.0009	0.00	Q	|	|	|	|
7+30	0.0010	0.00	Q	|	|	|	|
7+35	0.0010	0.00	Q	|	|	|	|
7+40	0.0010	0.00	Q	|	|	|	|
7+45	0.0010	0.00	Q	|	|	|	|
7+50	0.0011	0.00	Q	|	|	|	|
7+55	0.0011	0.00	Q	|	|	|	|
8+ 0	0.0011	0.00	Q	|	|	|	|
8+ 5	0.0011	0.00	Q	|	|	|	|
8+10	0.0012	0.00	Q	|	|	|	|
8+15	0.0012	0.00	Q	|	|	|	|
8+20	0.0012	0.00	Q	|	|	|	|
8+25	0.0012	0.00	Q	|	|	|	|
8+30	0.0013	0.00	Q	|	|	|	|

8+35	0.0013	0.00	Q	|	|	|	|
8+40	0.0013	0.00	Q	|	|	|	|
8+45	0.0013	0.00	Q	|	|	|	|
8+50	0.0014	0.00	Q	|	|	|	|
8+55	0.0014	0.00	Q	|	|	|	|
9+ 0	0.0014	0.00	Q	|	|	|	|
9+ 5	0.0015	0.00	Q	|	|	|	|
9+10	0.0015	0.00	Q	|	|	|	|
9+15	0.0015	0.00	Q	|	|	|	|
9+20	0.0016	0.01	Q	|	|	|	|
9+25	0.0016	0.01	Q	|	|	|	|
9+30	0.0016	0.01	Q	|	|	|	|
9+35	0.0017	0.01	Q	|	|	|	|
9+40	0.0017	0.01	Q	|	|	|	|
9+45	0.0018	0.01	Q	|	|	|	|
9+50	0.0018	0.01	Q	|	|	|	|
9+55	0.0018	0.01	Q	|	|	|	|
10+ 0	0.0019	0.01	Q	|	|	|	|
10+ 5	0.0019	0.00	Q	|	|	|	|
10+10	0.0019	0.00	Q	|	|	|	|
10+15	0.0020	0.00	Q	|	|	|	|
10+20	0.0020	0.00	Q	|	|	|	|
10+25	0.0020	0.00	Q	|	|	|	|
10+30	0.0020	0.00	Q	|	|	|	|
10+35	0.0021	0.00	Q	|	|	|	|
10+40	0.0021	0.01	Q	|	|	|	|
10+45	0.0021	0.01	Q	|	|	|	|
10+50	0.0022	0.01	Q	|	|	|	|
10+55	0.0022	0.01	Q	|	|	|	|
11+ 0	0.0023	0.01	Q	|	|	|	|
11+ 5	0.0023	0.01	Q	|	|	|	|
11+10	0.0023	0.00	Q	|	|	|	|
11+15	0.0024	0.00	Q	|	|	|	|
11+20	0.0024	0.00	Q	|	|	|	|
11+25	0.0024	0.00	Q	|	|	|	|
11+30	0.0025	0.00	Q	|	|	|	|
11+35	0.0025	0.00	Q	|	|	|	|
11+40	0.0025	0.00	Q	|	|	|	|
11+45	0.0026	0.00	Q	|	|	|	|
11+50	0.0026	0.00	Q	|	|	|	|
11+55	0.0026	0.00	Q	|	|	|	|
12+ 0	0.0027	0.00	Q	|	|	|	|
12+ 5	0.0027	0.01	Q	|	|	|	|
12+10	0.0027	0.01	Q	|	|	|	|
12+15	0.0028	0.01	Q	|	|	|	|
12+20	0.0028	0.01	Q	|	|	|	|
12+25	0.0029	0.01	Q	|	|	|	|
12+30	0.0029	0.01	Q	|	|	|	|
12+35	0.0030	0.01	Q	|	|	|	|
12+40	0.0030	0.01	Q	|	|	|	|
12+45	0.0031	0.01	Q	|	|	|	|
12+50	0.0031	0.01	Q	|	|	|	|
12+55	0.0032	0.01	Q	|	|	|	|
13+ 0	0.0032	0.01	Q	|	|	|	|
13+ 5	0.0033	0.01	Q	|	|	|	|
13+10	0.0033	0.01	Q	|	|	|	|
13+15	0.0034	0.01	Q	|	|	|	|
13+20	0.0035	0.01	Q	|	|	|	|
13+25	0.0035	0.01	Q	|	|	|	|
13+30	0.0036	0.01	Q	|	|	|	|
13+35	0.0036	0.01	Q	|	|	|	|
13+40	0.0037	0.01	Q	|	|	|	|
13+45	0.0037	0.01	Q	|	|	|	|
13+50	0.0038	0.01	Q	|	|	|	|
13+55	0.0038	0.01	Q	|	|	|	|
14+ 0	0.0039	0.01	Q	|	|	|	|
14+ 5	0.0039	0.01	Q	|	|	|	|
14+10	0.0039	0.01	Q	|	|	|	|
14+15	0.0040	0.01	Q	|	|	|	|
14+20	0.0040	0.01	Q	|	|	|	|
14+25	0.0041	0.01	Q	|	|	|	|

14+30	0.0041	0.01	Q	|	|	|	|
14+35	0.0042	0.01	Q	|	|	|	|
14+40	0.0042	0.01	Q	|	|	|	|
14+45	0.0043	0.01	Q	|	|	|	|
14+50	0.0043	0.01	Q	|	|	|	|
14+55	0.0044	0.01	Q	|	|	|	|
15+ 0	0.0044	0.01	Q	|	|	|	|
15+ 5	0.0045	0.01	Q	|	|	|	|
15+10	0.0045	0.01	Q	|	|	|	|
15+15	0.0045	0.01	Q	|	|	|	|
15+20	0.0046	0.01	Q	|	|	|	|
15+25	0.0046	0.01	Q	|	|	|	|
15+30	0.0047	0.01	Q	|	|	|	|
15+35	0.0047	0.01	Q	|	|	|	|
15+40	0.0047	0.01	Q	|	|	|	|
15+45	0.0048	0.00	Q	|	|	|	|
15+50	0.0048	0.00	Q	|	|	|	|
15+55	0.0048	0.00	Q	|	|	|	|
16+ 0	0.0049	0.00	Q	|	|	|	|
16+ 5	0.0049	0.00	Q	|	|	|	|
16+10	0.0049	0.00	Q	|	|	|	|
16+15	0.0049	0.00	Q	|	|	|	|
16+20	0.0049	0.00	Q	|	|	|	|
16+25	0.0049	0.00	Q	|	|	|	|
16+30	0.0049	0.00	Q	|	|	|	|
16+35	0.0049	0.00	Q	|	|	|	|
16+40	0.0049	0.00	Q	|	|	|	|
16+45	0.0050	0.00	Q	|	|	|	|
16+50	0.0050	0.00	Q	|	|	|	|
16+55	0.0050	0.00	Q	|	|	|	|
17+ 0	0.0050	0.00	Q	|	|	|	|
17+ 5	0.0050	0.00	Q	|	|	|	|
17+10	0.0050	0.00	Q	|	|	|	|
17+15	0.0050	0.00	Q	|	|	|	|
17+20	0.0050	0.00	Q	|	|	|	|
17+25	0.0050	0.00	Q	|	|	|	|
17+30	0.0050	0.00	Q	|	|	|	|
17+35	0.0050	0.00	Q	|	|	|	|
17+40	0.0050	0.00	Q	|	|	|	|
17+45	0.0050	0.00	Q	|	|	|	|
17+50	0.0051	0.00	Q	|	|	|	|
17+55	0.0051	0.00	QV	|	|	|	|
18+ 0	0.0051	0.00	QV	|	|	|	|
18+ 5	0.0051	0.00	QV	|	|	|	|
18+10	0.0051	0.00	QV	|	|	|	|
18+15	0.0051	0.00	QV	|	|	|	|
18+20	0.0051	0.00	QV	|	|	|	|
18+25	0.0051	0.00	QV	|	|	|	|
18+30	0.0051	0.00	QV	|	|	|	|
18+35	0.0051	0.00	QV	|	|	|	|
18+40	0.0051	0.00	QV	|	|	|	|
18+45	0.0051	0.00	QV	|	|	|	|
18+50	0.0051	0.00	QV	|	|	|	|
18+55	0.0051	0.00	QV	|	|	|	|
19+ 0	0.0051	0.00	QV	|	|	|	|
19+ 5	0.0051	0.00	QV	|	|	|	|
19+10	0.0052	0.00	QV	|	|	|	|
19+15	0.0052	0.00	QV	|	|	|	|
19+20	0.0052	0.00	QV	|	|	|	|
19+25	0.0052	0.00	QV	|	|	|	|
19+30	0.0052	0.00	QV	|	|	|	|
19+35	0.0052	0.00	QV	|	|	|	|
19+40	0.0052	0.00	QV	|	|	|	|
19+45	0.0052	0.00	QV	|	|	|	|
19+50	0.0052	0.00	QV	|	|	|	|
19+55	0.0052	0.00	QV	|	|	|	|
20+ 0	0.0052	0.00	QV	|	|	|	|
20+ 5	0.0052	0.00	QV	|	|	|	|
20+10	0.0052	0.00	QV	|	|	|	|
20+15	0.0052	0.00	QV	|	|	|	|
20+20	0.0052	0.00	QV	|	|	|	|

20+25	0.0052	0.00	QV	|	|	|	|
20+30	0.0052	0.00	QV	|	|	|	|
20+35	0.0052	0.00	QV	|	|	|	|
20+40	0.0053	0.00	QV	|	|	|	|
20+45	0.0053	0.00	QV	|	|	|	|
20+50	0.0053	0.00	QV	|	|	|	|
20+55	0.0053	0.00	QV	|	|	|	|
21+ 0	0.0053	0.00	QV	|	|	|	|
21+ 5	0.0053	0.00	QV	|	|	|	|
21+10	0.0053	0.00	QV	|	|	|	|
21+15	0.0053	0.00	QV	|	|	|	|
21+20	0.0053	0.00	QV	|	|	|	|
21+25	0.0053	0.00	QV	|	|	|	|
21+30	0.0053	0.00	QV	|	|	|	|
21+35	0.0053	0.00	QV	|	|	|	|
21+40	0.0053	0.00	QV	|	|	|	|
21+45	0.0053	0.00	QV	|	|	|	|
21+50	0.0053	0.00	QV	|	|	|	|
21+55	0.0053	0.00	QV	|	|	|	|
22+ 0	0.0053	0.00	QV	|	|	|	|
22+ 5	0.0053	0.00	QV	|	|	|	|
22+10	0.0053	0.00	QV	|	|	|	|
22+15	0.0053	0.00	QV	|	|	|	|
22+20	0.0053	0.00	QV	|	|	|	|
22+25	0.0053	0.00	QV	|	|	|	|
22+30	0.0053	0.00	QV	|	|	|	|
22+35	0.0054	0.00	QV	|	|	|	|
22+40	0.0054	0.00	QV	|	|	|	|
22+45	0.0054	0.00	QV	|	|	|	|
22+50	0.0054	0.00	QV	|	|	|	|
22+55	0.0054	0.00	QV	|	|	|	|
23+ 0	0.0054	0.00	QV	|	|	|	|
23+ 5	0.0054	0.00	QV	|	|	|	|
23+10	0.0054	0.00	QV	|	|	|	|
23+15	0.0054	0.00	QV	|	|	|	|
23+20	0.0054	0.00	QV	|	|	|	|
23+25	0.0054	0.00	QV	|	|	|	|
23+30	0.0054	0.00	QV	|	|	|	|
23+35	0.0054	0.00	QV	|	|	|	|
23+40	0.0054	0.00	QV	|	|	|	|
23+45	0.0054	0.00	QV	|	|	|	|
23+50	0.0054	0.00	QV	|	|	|	|
23+55	0.0054	0.00	QV	|	|	|	|
24+ 0	0.0054	0.00	QV	|	|	|	|
24+ 5	0.0054	0.00	QV	|	|	|	|
24+10	0.0054	0.00	QV	|	|	|	|
24+15	0.0054	0.00	QV	|	|	|	|
24+20	0.0054	0.00	QV	|	|	|	|
24+25	0.0054	0.00	QV	|	|	|	|
24+30	0.0054	0.00	QV	|	|	|	|
24+35	0.0055	0.00	QV	|	|	|	|
24+40	0.0055	0.00	QV	|	|	|	|
24+45	0.0055	0.00	QV	|	|	|	|
24+50	0.0055	0.00	QV	|	|	|	|
24+55	0.0055	0.00	QV	|	|	|	|
25+ 0	0.0055	0.00	QV	|	|	|	|
25+ 5	0.0055	0.00	QV	|	|	|	|
25+10	0.0055	0.00	QV	|	|	|	|
25+15	0.0055	0.00	QV	|	|	|	|
25+20	0.0055	0.00	QV	|	|	|	|
25+25	0.0055	0.00	QV	|	|	|	|
25+30	0.0055	0.00	QV	|	|	|	|
25+35	0.0055	0.00	QV	|	|	|	|
25+40	0.0055	0.00	QV	|	|	|	|
25+45	0.0056	0.00	QV	|	|	|	|
25+50	0.0056	0.00	QV	|	|	|	|
25+55	0.0056	0.00	QV	|	|	|	|
26+ 0	0.0056	0.00	QV	|	|	|	|
26+ 5	0.0056	0.00	QV	|	|	|	|
26+10	0.0056	0.00	QV	|	|	|	|
26+15	0.0056	0.00	QV	|	|	|	|

26+20	0.0056	0.00	QV	|	|	|	|
26+25	0.0056	0.00	QV	|	|	|	|
26+30	0.0056	0.00	QV	|	|	|	|
26+35	0.0056	0.00	QV	|	|	|	|
26+40	0.0057	0.00	QV	|	|	|	|
26+45	0.0057	0.00	QV	|	|	|	|
26+50	0.0057	0.00	QV	|	|	|	|
26+55	0.0057	0.00	QV	|	|	|	|
27+ 0	0.0057	0.00	QV	|	|	|	|
27+ 5	0.0057	0.00	QV	|	|	|	|
27+10	0.0057	0.00	QV	|	|	|	|
27+15	0.0057	0.00	QV	|	|	|	|
27+20	0.0057	0.00	QV	|	|	|	|
27+25	0.0058	0.00	QV	|	|	|	|
27+30	0.0058	0.00	QV	|	|	|	|
27+35	0.0058	0.00	QV	|	|	|	|
27+40	0.0058	0.00	QV	|	|	|	|
27+45	0.0058	0.00	QV	|	|	|	|
27+50	0.0058	0.00	QV	|	|	|	|
27+55	0.0058	0.00	QV	|	|	|	|
28+ 0	0.0058	0.00	QV	|	|	|	|
28+ 5	0.0059	0.00	QV	|	|	|	|
28+10	0.0059	0.00	QV	|	|	|	|
28+15	0.0059	0.00	QV	|	|	|	|
28+20	0.0059	0.00	QV	|	|	|	|
28+25	0.0059	0.00	QV	|	|	|	|
28+30	0.0059	0.00	QV	|	|	|	|
28+35	0.0060	0.00	QV	|	|	|	|
28+40	0.0060	0.00	QV	|	|	|	|
28+45	0.0060	0.00	QV	|	|	|	|
28+50	0.0060	0.00	QV	|	|	|	|
28+55	0.0060	0.00	QV	|	|	|	|
29+ 0	0.0060	0.00	QV	|	|	|	|
29+ 5	0.0061	0.00	QV	|	|	|	|
29+10	0.0061	0.00	QV	|	|	|	|
29+15	0.0061	0.00	QV	|	|	|	|
29+20	0.0061	0.00	QV	|	|	|	|
29+25	0.0061	0.00	QV	|	|	|	|
29+30	0.0061	0.00	QV	|	|	|	|
29+35	0.0061	0.00	QV	|	|	|	|
29+40	0.0062	0.00	QV	|	|	|	|
29+45	0.0062	0.00	QV	|	|	|	|
29+50	0.0062	0.00	QV	|	|	|	|
29+55	0.0062	0.00	QV	|	|	|	|
30+ 0	0.0062	0.00	QV	|	|	|	|
30+ 5	0.0063	0.00	QV	|	|	|	|
30+10	0.0063	0.00	QV	|	|	|	|
30+15	0.0063	0.00	QV	|	|	|	|
30+20	0.0063	0.00	QV	|	|	|	|
30+25	0.0063	0.00	QV	|	|	|	|
30+30	0.0064	0.00	QV	|	|	|	|
30+35	0.0064	0.00	QV	|	|	|	|
30+40	0.0064	0.00	QV	|	|	|	|
30+45	0.0064	0.00	QV	|	|	|	|
30+50	0.0064	0.00	QV	|	|	|	|
30+55	0.0065	0.00	QV	|	|	|	|
31+ 0	0.0065	0.00	QV	|	|	|	|
31+ 5	0.0065	0.00	QV	|	|	|	|
31+10	0.0065	0.00	QV	|	|	|	|
31+15	0.0066	0.00	QV	|	|	|	|
31+20	0.0066	0.00	QV	|	|	|	|
31+25	0.0066	0.00	QV	|	|	|	|
31+30	0.0066	0.00	QV	|	|	|	|
31+35	0.0067	0.00	QV	|	|	|	|
31+40	0.0067	0.00	QV	|	|	|	|
31+45	0.0067	0.00	QV	|	|	|	|
31+50	0.0067	0.00	QV	|	|	|	|
31+55	0.0068	0.00	QV	|	|	|	|
32+ 0	0.0068	0.00	QV	|	|	|	|
32+ 5	0.0068	0.00	QV	|	|	|	|
32+10	0.0069	0.00	QV	|	|	|	|

32+15	0.0069	0.00	QV	|	|	|	|
32+20	0.0069	0.00	QV	|	|	|	|
32+25	0.0070	0.00	QV	|	|	|	|
32+30	0.0070	0.00	QV	|	|	|	|
32+35	0.0070	0.01	QV	|	|	|	|
32+40	0.0071	0.01	QV	|	|	|	|
32+45	0.0071	0.01	QV	|	|	|	|
32+50	0.0072	0.01	QV	|	|	|	|
32+55	0.0072	0.01	QV	|	|	|	|
33+ 0	0.0072	0.01	QV	|	|	|	|
33+ 5	0.0073	0.01	QV	|	|	|	|
33+10	0.0073	0.01	QV	|	|	|	|
33+15	0.0074	0.01	QV	|	|	|	|
33+20	0.0074	0.01	QV	|	|	|	|
33+25	0.0075	0.01	QV	|	|	|	|
33+30	0.0075	0.01	QV	|	|	|	|
33+35	0.0075	0.01	QV	|	|	|	|
33+40	0.0076	0.01	QV	|	|	|	|
33+45	0.0076	0.01	QV	|	|	|	|
33+50	0.0077	0.01	QV	|	|	|	|
33+55	0.0077	0.01	QV	|	|	|	|
34+ 0	0.0078	0.01	QV	|	|	|	|
34+ 5	0.0078	0.01	QV	|	|	|	|
34+10	0.0079	0.01	QV	|	|	|	|
34+15	0.0079	0.00	QV	|	|	|	|
34+20	0.0079	0.00	QV	|	|	|	|
34+25	0.0080	0.00	QV	|	|	|	|
34+30	0.0080	0.00	QV	|	|	|	|
34+35	0.0080	0.01	QV	|	|	|	|
34+40	0.0081	0.01	QV	|	|	|	|
34+45	0.0081	0.01	QV	|	|	|	|
34+50	0.0082	0.01	QV	|	|	|	|
34+55	0.0082	0.01	QV	|	|	|	|
35+ 0	0.0083	0.01	QV	|	|	|	|
35+ 5	0.0083	0.01	QV	|	|	|	|
35+10	0.0084	0.01	QV	|	|	|	|
35+15	0.0084	0.01	QV	|	|	|	|
35+20	0.0084	0.01	QV	|	|	|	|
35+25	0.0085	0.01	QV	|	|	|	|
35+30	0.0085	0.01	QV	|	|	|	|
35+35	0.0086	0.01	QV	|	|	|	|
35+40	0.0086	0.01	QV	|	|	|	|
35+45	0.0087	0.01	QV	|	|	|	|
35+50	0.0087	0.01	QV	|	|	|	|
35+55	0.0087	0.01	QV	|	|	|	|
36+ 0	0.0088	0.01	QV	|	|	|	|
36+ 5	0.0088	0.01	QV	|	|	|	|
36+10	0.0089	0.01	QV	|	|	|	|
36+15	0.0089	0.01	QV	|	|	|	|
36+20	0.0090	0.01	QV	|	|	|	|
36+25	0.0091	0.01	QV	|	|	|	|
36+30	0.0091	0.01	QV	|	|	|	|
36+35	0.0092	0.01	QV	|	|	|	|
36+40	0.0092	0.01	QV	|	|	|	|
36+45	0.0093	0.01	QV	|	|	|	|
36+50	0.0094	0.01	QV	|	|	|	|
36+55	0.0094	0.01	QV	|	|	|	|
37+ 0	0.0095	0.01	QV	|	|	|	|
37+ 5	0.0096	0.01	QV	|	|	|	|
37+10	0.0097	0.01	QV	|	|	|	|
37+15	0.0097	0.01	QV	|	|	|	|
37+20	0.0098	0.01	QV	|	|	|	|
37+25	0.0099	0.01	QV	|	|	|	|
37+30	0.0100	0.01	QV	|	|	|	|
37+35	0.0100	0.01	QV	|	|	|	|
37+40	0.0101	0.01	QV	|	|	|	|
37+45	0.0101	0.01	Q V	|	|	|	|
37+50	0.0102	0.01	Q V	|	|	|	|
37+55	0.0102	0.01	Q V	|	|	|	|
38+ 0	0.0103	0.01	Q V	|	|	|	|
38+ 5	0.0104	0.01	Q V	|	|	|	|

38+10	0.0104	0.01	Q V	|	|	|	|
38+15	0.0105	0.01	Q V	|	|	|	|
38+20	0.0105	0.01	Q V	|	|	|	|
38+25	0.0106	0.01	Q V	|	|	|	|
38+30	0.0107	0.01	Q V	|	|	|	|
38+35	0.0107	0.01	Q V	|	|	|	|
38+40	0.0108	0.01	Q V	|	|	|	|
38+45	0.0108	0.01	Q V	|	|	|	|
38+50	0.0109	0.01	Q V	|	|	|	|
38+55	0.0109	0.01	Q V	|	|	|	|
39+ 0	0.0110	0.01	Q V	|	|	|	|
39+ 5	0.0111	0.01	Q V	|	|	|	|
39+10	0.0111	0.01	Q V	|	|	|	|
39+15	0.0112	0.01	Q V	|	|	|	|
39+20	0.0112	0.01	Q V	|	|	|	|
39+25	0.0113	0.01	Q V	|	|	|	|
39+30	0.0113	0.01	Q V	|	|	|	|
39+35	0.0114	0.01	Q V	|	|	|	|
39+40	0.0114	0.01	Q V	|	|	|	|
39+45	0.0115	0.01	Q V	|	|	|	|
39+50	0.0115	0.01	Q V	|	|	|	|
39+55	0.0116	0.01	Q V	|	|	|	|
40+ 0	0.0116	0.01	Q V	|	|	|	|
40+ 5	0.0116	0.00	Q V	|	|	|	|
40+10	0.0116	0.00	Q V	|	|	|	|
40+15	0.0116	0.00	Q V	|	|	|	|
40+20	0.0116	0.00	Q V	|	|	|	|
40+25	0.0117	0.00	Q V	|	|	|	|
40+30	0.0117	0.00	Q V	|	|	|	|
40+35	0.0117	0.00	Q V	|	|	|	|
40+40	0.0117	0.00	Q V	|	|	|	|
40+45	0.0117	0.00	Q V	|	|	|	|
40+50	0.0117	0.00	Q V	|	|	|	|
40+55	0.0117	0.00	Q V	|	|	|	|
41+ 0	0.0117	0.00	Q V	|	|	|	|
41+ 5	0.0117	0.00	Q V	|	|	|	|
41+10	0.0117	0.00	Q V	|	|	|	|
41+15	0.0117	0.00	Q V	|	|	|	|
41+20	0.0118	0.00	Q V	|	|	|	|
41+25	0.0118	0.00	Q V	|	|	|	|
41+30	0.0118	0.00	Q V	|	|	|	|
41+35	0.0118	0.00	Q V	|	|	|	|
41+40	0.0118	0.00	Q V	|	|	|	|
41+45	0.0118	0.00	Q V	|	|	|	|
41+50	0.0118	0.00	Q V	|	|	|	|
41+55	0.0118	0.00	Q V	|	|	|	|
42+ 0	0.0118	0.00	Q V	|	|	|	|
42+ 5	0.0118	0.00	Q V	|	|	|	|
42+10	0.0119	0.00	Q V	|	|	|	|
42+15	0.0119	0.00	Q V	|	|	|	|
42+20	0.0119	0.00	Q V	|	|	|	|
42+25	0.0119	0.00	Q V	|	|	|	|
42+30	0.0119	0.00	Q V	|	|	|	|
42+35	0.0119	0.00	Q V	|	|	|	|
42+40	0.0119	0.00	Q V	|	|	|	|
42+45	0.0119	0.00	Q V	|	|	|	|
42+50	0.0119	0.00	Q V	|	|	|	|
42+55	0.0119	0.00	Q V	|	|	|	|
43+ 0	0.0119	0.00	Q V	|	|	|	|
43+ 5	0.0119	0.00	Q V	|	|	|	|
43+10	0.0119	0.00	Q V	|	|	|	|
43+15	0.0119	0.00	Q V	|	|	|	|
43+20	0.0120	0.00	Q V	|	|	|	|
43+25	0.0120	0.00	Q V	|	|	|	|
43+30	0.0120	0.00	Q V	|	|	|	|
43+35	0.0120	0.00	Q V	|	|	|	|
43+40	0.0120	0.00	Q V	|	|	|	|
43+45	0.0120	0.00	Q V	|	|	|	|
43+50	0.0120	0.00	Q V	|	|	|	|
43+55	0.0120	0.00	Q V	|	|	|	|
44+ 0	0.0120	0.00	Q V	|	|	|	|

44+ 5	0.0120	0.00	Q V	|	|	|	|
44+10	0.0120	0.00	Q V	|	|	|	|
44+15	0.0120	0.00	Q V	|	|	|	|
44+20	0.0120	0.00	Q V	|	|	|	|
44+25	0.0120	0.00	Q V	|	|	|	|
44+30	0.0120	0.00	Q V	|	|	|	|
44+35	0.0121	0.00	Q V	|	|	|	|
44+40	0.0121	0.00	Q V	|	|	|	|
44+45	0.0121	0.00	Q V	|	|	|	|
44+50	0.0121	0.00	Q V	|	|	|	|
44+55	0.0121	0.00	Q V	|	|	|	|
45+ 0	0.0121	0.00	Q V	|	|	|	|
45+ 5	0.0121	0.00	Q V	|	|	|	|
45+10	0.0121	0.00	Q V	|	|	|	|
45+15	0.0121	0.00	Q V	|	|	|	|
45+20	0.0121	0.00	Q V	|	|	|	|
45+25	0.0121	0.00	Q V	|	|	|	|
45+30	0.0121	0.00	Q V	|	|	|	|
45+35	0.0121	0.00	Q V	|	|	|	|
45+40	0.0121	0.00	Q V	|	|	|	|
45+45	0.0121	0.00	Q V	|	|	|	|
45+50	0.0121	0.00	Q V	|	|	|	|
45+55	0.0121	0.00	Q V	|	|	|	|
46+ 0	0.0122	0.00	Q V	|	|	|	|
46+ 5	0.0122	0.00	Q V	|	|	|	|
46+10	0.0122	0.00	Q V	|	|	|	|
46+15	0.0122	0.00	Q V	|	|	|	|
46+20	0.0122	0.00	Q V	|	|	|	|
46+25	0.0122	0.00	Q V	|	|	|	|
46+30	0.0122	0.00	Q V	|	|	|	|
46+35	0.0122	0.00	Q V	|	|	|	|
46+40	0.0122	0.00	Q V	|	|	|	|
46+45	0.0122	0.00	Q V	|	|	|	|
46+50	0.0122	0.00	Q V	|	|	|	|
46+55	0.0122	0.00	Q V	|	|	|	|
47+ 0	0.0122	0.00	Q V	|	|	|	|
47+ 5	0.0122	0.00	Q V	|	|	|	|
47+10	0.0122	0.00	Q V	|	|	|	|
47+15	0.0122	0.00	Q V	|	|	|	|
47+20	0.0122	0.00	Q V	|	|	|	|
47+25	0.0122	0.00	Q V	|	|	|	|
47+30	0.0122	0.00	Q V	|	|	|	|
47+35	0.0122	0.00	Q V	|	|	|	|
47+40	0.0123	0.00	Q V	|	|	|	|
47+45	0.0123	0.00	Q V	|	|	|	|
47+50	0.0123	0.00	Q V	|	|	|	|
47+55	0.0123	0.00	Q V	|	|	|	|
48+ 0	0.0123	0.00	Q V	|	|	|	|
48+ 5	0.0123	0.00	Q V	|	|	|	|
48+10	0.0123	0.00	Q V	|	|	|	|
48+15	0.0123	0.00	Q V	|	|	|	|
48+20	0.0123	0.00	Q V	|	|	|	|
48+25	0.0123	0.00	Q V	|	|	|	|
48+30	0.0123	0.00	Q V	|	|	|	|
48+35	0.0123	0.00	Q V	|	|	|	|
48+40	0.0124	0.00	Q V	|	|	|	|
48+45	0.0124	0.00	Q V	|	|	|	|
48+50	0.0124	0.00	Q V	|	|	|	|
48+55	0.0124	0.00	Q V	|	|	|	|
49+ 0	0.0124	0.00	Q V	|	|	|	|
49+ 5	0.0124	0.00	Q V	|	|	|	|
49+10	0.0124	0.00	Q V	|	|	|	|
49+15	0.0125	0.00	Q V	|	|	|	|
49+20	0.0125	0.00	Q V	|	|	|	|
49+25	0.0125	0.00	Q V	|	|	|	|
49+30	0.0125	0.00	Q V	|	|	|	|
49+35	0.0125	0.00	Q V	|	|	|	|
49+40	0.0125	0.00	Q V	|	|	|	|
49+45	0.0125	0.00	Q V	|	|	|	|
49+50	0.0126	0.00	Q V	|	|	|	|
49+55	0.0126	0.00	Q V	|	|	|	|

50+ 0	0.0126	0.00	Q V	|	|	|	|
50+ 5	0.0126	0.00	Q V	|	|	|	|
50+10	0.0126	0.00	Q V	|	|	|	|
50+15	0.0126	0.00	Q V	|	|	|	|
50+20	0.0127	0.00	Q V	|	|	|	|
50+25	0.0127	0.00	Q V	|	|	|	|
50+30	0.0127	0.00	Q V	|	|	|	|
50+35	0.0127	0.00	Q V	|	|	|	|
50+40	0.0127	0.00	Q V	|	|	|	|
50+45	0.0128	0.00	Q V	|	|	|	|
50+50	0.0128	0.00	Q V	|	|	|	|
50+55	0.0128	0.00	Q V	|	|	|	|
51+ 0	0.0128	0.00	Q V	|	|	|	|
51+ 5	0.0128	0.00	Q V	|	|	|	|
51+10	0.0129	0.00	Q V	|	|	|	|
51+15	0.0129	0.00	Q V	|	|	|	|
51+20	0.0129	0.00	Q V	|	|	|	|
51+25	0.0129	0.00	Q V	|	|	|	|
51+30	0.0129	0.00	Q V	|	|	|	|
51+35	0.0130	0.00	Q V	|	|	|	|
51+40	0.0130	0.00	Q V	|	|	|	|
51+45	0.0130	0.00	Q V	|	|	|	|
51+50	0.0130	0.00	Q V	|	|	|	|
51+55	0.0131	0.00	Q V	|	|	|	|
52+ 0	0.0131	0.00	Q V	|	|	|	|
52+ 5	0.0131	0.00	Q V	|	|	|	|
52+10	0.0131	0.00	Q V	|	|	|	|
52+15	0.0132	0.00	Q V	|	|	|	|
52+20	0.0132	0.00	Q V	|	|	|	|
52+25	0.0132	0.00	Q V	|	|	|	|
52+30	0.0133	0.00	Q V	|	|	|	|
52+35	0.0133	0.00	Q V	|	|	|	|
52+40	0.0133	0.00	Q V	|	|	|	|
52+45	0.0133	0.00	Q V	|	|	|	|
52+50	0.0134	0.00	Q V	|	|	|	|
52+55	0.0134	0.00	Q V	|	|	|	|
53+ 0	0.0135	0.01	Q V	|	|	|	|
53+ 5	0.0135	0.00	Q V	|	|	|	|
53+10	0.0135	0.00	Q V	|	|	|	|
53+15	0.0135	0.00	Q V	|	|	|	|
53+20	0.0136	0.00	Q V	|	|	|	|
53+25	0.0136	0.00	Q V	|	|	|	|
53+30	0.0136	0.00	Q V	|	|	|	|
53+35	0.0137	0.00	Q V	|	|	|	|
53+40	0.0137	0.00	Q V	|	|	|	|
53+45	0.0137	0.01	Q V	|	|	|	|
53+50	0.0138	0.01	Q V	|	|	|	|
53+55	0.0138	0.01	Q V	|	|	|	|
54+ 0	0.0138	0.01	Q V	|	|	|	|
54+ 5	0.0139	0.01	Q V	|	|	|	|
54+10	0.0139	0.01	Q V	|	|	|	|
54+15	0.0139	0.01	Q V	|	|	|	|
54+20	0.0140	0.01	Q V	|	|	|	|
54+25	0.0140	0.01	Q V	|	|	|	|
54+30	0.0141	0.01	Q V	|	|	|	|
54+35	0.0141	0.01	Q V	|	|	|	|
54+40	0.0141	0.01	Q V	|	|	|	|
54+45	0.0142	0.01	Q V	|	|	|	|
54+50	0.0142	0.01	Q V	|	|	|	|
54+55	0.0143	0.01	Q V	|	|	|	|
55+ 0	0.0143	0.01	Q V	|	|	|	|
55+ 5	0.0144	0.01	Q V	|	|	|	|
55+10	0.0144	0.01	Q V	|	|	|	|
55+15	0.0144	0.01	Q V	|	|	|	|
55+20	0.0145	0.01	Q V	|	|	|	|
55+25	0.0145	0.01	Q V	|	|	|	|
55+30	0.0146	0.01	Q V	|	|	|	|
55+35	0.0146	0.01	Q V	|	|	|	|
55+40	0.0147	0.01	Q V	|	|	|	|
55+45	0.0147	0.01	Q V	|	|	|	|
55+50	0.0148	0.01	Q V	|	|	|	|

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55+55       0.0149      0.01  Q V       |          |          |          |
56+ 0       0.0149      0.01  Q V       |          |          |          |
56+ 5       0.0150      0.01  Q V       |          |          |          |
56+10       0.0150      0.01  Q V       |          |          |          |
56+15       0.0151      0.01  Q V       |          |          |          |
56+20       0.0152      0.01  Q V       |          |          |          |
56+25       0.0152      0.01  Q  V      |          |          |          |
56+30       0.0153      0.01  Q  V      |          |          |          |
56+35       0.0154      0.01  Q  V      |          |          |          |
56+40       0.0154      0.01  Q  V      |          |          |          |
56+45       0.0155      0.01  Q  V      |          |          |          |
56+50       0.0156      0.01  Q  V      |          |          |          |
56+55       0.0156      0.01  Q  V      |          |          |          |
57+ 0       0.0157      0.01  Q  V      |          |          |          |
57+ 5       0.0158      0.01  Q  V      |          |          |          |
57+10       0.0159      0.01  Q  V      |          |          |          |
57+15       0.0160      0.01  Q  V      |          |          |          |
57+20       0.0160      0.01  Q  V      |          |          |          |
57+25       0.0161      0.01  Q  V      |          |          |          |
57+30       0.0162      0.01  Q  V      |          |          |          |
57+35       0.0163      0.01  Q  V      |          |          |          |
57+40       0.0164      0.01  Q  V      |          |          |          |
57+45       0.0165      0.01  Q  V      |          |          |          |
57+50       0.0166      0.01  Q  V      |          |          |          |
57+55       0.0167      0.01  Q  V      |          |          |          |
58+ 0       0.0168      0.01  Q  V      |          |          |          |
58+ 5       0.0169      0.01  Q  V      |          |          |          |
58+10       0.0169      0.01  Q  V      |          |          |          |
58+15       0.0170      0.01  Q  V      |          |          |          |
58+20       0.0170      0.01  Q  V      |          |          |          |
58+25       0.0171      0.01  Q  V      |          |          |          |
58+30       0.0172      0.01  Q  V      |          |          |          |
58+35       0.0173      0.01  Q  V      |          |          |          |
58+40       0.0173      0.01  Q  V      |          |          |          |
58+45       0.0174      0.01  Q  V      |          |          |          |
58+50       0.0175      0.01  Q  V      |          |          |          |
58+55       0.0176      0.01  Q  V      |          |          |          |
59+ 0       0.0177      0.01  Q  V      |          |          |          |
59+ 5       0.0178      0.01  Q  V      |          |          |          |
59+10       0.0179      0.01  Q  V      |          |          |          |
59+15       0.0179      0.01  Q  V      |          |          |          |
59+20       0.0180      0.01  Q  V      |          |          |          |
59+25       0.0181      0.01  Q  V      |          |          |          |
59+30       0.0182      0.01  Q  V      |          |          |          |
59+35       0.0183      0.01  Q  V      |          |          |          |
59+40       0.0183      0.01  Q  V      |          |          |          |
59+45       0.0184      0.01  Q  V      |          |          |          |
59+50       0.0185      0.01  Q  V      |          |          |          |
59+55       0.0186      0.01  Q  V      |          |          |          |
60+ 0       0.0186      0.01  Q  V      |          |          |          |
60+ 5       0.0187      0.01  Q  V      |          |          |          |
60+10       0.0189      0.02  Q  V      |          |          |          |
60+15       0.0190      0.02  Q  V      |          |          |          |
60+20       0.0191      0.02  Q  V      |          |          |          |
60+25       0.0193      0.03  Q  V      |          |          |          |
60+30       0.0195      0.03  Q  V      |          |          |          |
60+35       0.0198      0.03  Q  V      |          |          |          |
60+40       0.0200      0.04  Q  V      |          |          |          |
60+45       0.0203      0.04  Q   V     |          |          |          |
60+50       0.0206      0.05  Q   V     |          |          |          |
60+55       0.0210      0.05  Q   V     |          |          |          |
61+ 0       0.0213      0.05  Q   V     |          |          |          |
61+ 5       0.0218      0.07  Q   V     |          |          |          |
61+10       0.0223      0.08  Q   V     |          |          |          |
61+15       0.0229      0.08  Q   V     |          |          |          |
61+20       0.0235      0.08  Q   V     |          |          |          |
61+25       0.0241      0.08  Q   V     |          |          |          |
61+30       0.0247      0.09  Q   V     |          |          |          |
61+35       0.0250      0.05  Q   V     |          |          |          |
61+40       0.0251      0.02  Q   V     |          |          |          |
61+45       0.0252      0.02  Q   V     |          |          |          |
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61+50       0.0254      0.02  Q    V    |          |          |          |
61+55       0.0255      0.02  Q    V    |          |          |          |
62+ 0       0.0256      0.02  Q    V    |          |          |          |
62+ 5       0.0259      0.04  Q    V    |          |          |          |
62+10       0.0262      0.05  Q    V    |          |          |          |
62+15       0.0265      0.05  Q    V    |          |          |          |
62+20       0.0268      0.04  Q    V    |          |          |          |
62+25       0.0271      0.04  Q    V    |          |          |          |
62+30       0.0274      0.04  Q    V    |          |          |          |
62+35       0.0277      0.04  Q    V    |          |          |          |
62+40       0.0280      0.04  Q    V    |          |          |          |
62+45       0.0283      0.04  Q    V    |          |          |          |
62+50       0.0286      0.04  Q    V    |          |          |          |
62+55       0.0289      0.04  Q    V    |          |          |          |
63+ 0       0.0291      0.04  Q    V    |          |          |          |
63+ 5       0.0294      0.04  Q    V    |          |          |          |
63+10       0.0296      0.04  Q    V    |          |          |          |
63+15       0.0299      0.04  Q    V    |          |          |          |
63+20       0.0301      0.03  Q    V    |          |          |          |
63+25       0.0303      0.03  Q    V    |          |          |          |
63+30       0.0305      0.03  Q     V   |          |          |          |
63+35       0.0306      0.02  Q     V   |          |          |          |
63+40       0.0307      0.01  Q     V   |          |          |          |
63+45       0.0307      0.01  Q     V   |          |          |          |
63+50       0.0308      0.01  Q     V   |          |          |          |
63+55       0.0309      0.01  Q     V   |          |          |          |
64+ 0       0.0309      0.01  Q     V   |          |          |          |
64+ 5       0.0310      0.01  Q     V   |          |          |          |
64+10       0.0310      0.00  Q     V   |          |          |          |
64+15       0.0310      0.00  Q     V   |          |          |          |
64+20       0.0310      0.00  Q     V   |          |          |          |
64+25       0.0310      0.00  Q     V   |          |          |          |
64+30       0.0310      0.00  Q     V   |          |          |          |
64+35       0.0311      0.00  Q     V   |          |          |          |
64+40       0.0311      0.00  Q     V   |          |          |          |
64+45       0.0311      0.00  Q     V   |          |          |          |
64+50       0.0311      0.00  Q     V   |          |          |          |
64+55       0.0311      0.00  Q     V   |          |          |          |
65+ 0       0.0311      0.00  Q     V   |          |          |          |
65+ 5       0.0311      0.00  Q     V   |          |          |          |
65+10       0.0312      0.00  Q     V   |          |          |          |
65+15       0.0312      0.00  Q     V   |          |          |          |
65+20       0.0312      0.00  Q     V   |          |          |          |
65+25       0.0312      0.00  Q     V   |          |          |          |
65+30       0.0313      0.00  Q     V   |          |          |          |
65+35       0.0313      0.00  Q     V   |          |          |          |
65+40       0.0313      0.00  Q     V   |          |          |          |
65+45       0.0313      0.00  Q     V   |          |          |          |
65+50       0.0313      0.00  Q     V   |          |          |          |
65+55       0.0314      0.00  Q     V   |          |          |          |
66+ 0       0.0314      0.00  Q     V   |          |          |          |
66+ 5       0.0314      0.00  Q     V   |          |          |          |
66+10       0.0314      0.00  Q     V   |          |          |          |
66+15       0.0314      0.00  Q     V   |          |          |          |
66+20       0.0314      0.00  Q     V   |          |          |          |
66+25       0.0315      0.00  Q     V   |          |          |          |
66+30       0.0315      0.00  Q     V   |          |          |          |
66+35       0.0315      0.00  Q     V   |          |          |          |
66+40       0.0315      0.00  Q     V   |          |          |          |
66+45       0.0315      0.00  Q     V   |          |          |          |
66+50       0.0315      0.00  Q     V   |          |          |          |
66+55       0.0315      0.00  Q     V   |          |          |          |
67+ 0       0.0315      0.00  Q     V   |          |          |          |
67+ 5       0.0316      0.00  Q     V   |          |          |          |
67+10       0.0316      0.00  Q     V   |          |          |          |
67+15       0.0316      0.00  Q     V   |          |          |          |
67+20       0.0316      0.00  Q     V   |          |          |          |
67+25       0.0316      0.00  Q     V   |          |          |          |
67+30       0.0316      0.00  Q     V   |          |          |          |
67+35       0.0316      0.00  Q     V   |          |          |          |
67+40       0.0317      0.00  Q     V   |          |          |          |
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67+45	0.0317	0.00	Q	V	|	|	|	|
67+50	0.0317	0.00	Q	V	|	|	|	|
67+55	0.0317	0.00	Q	V	|	|	|	|
68+ 0	0.0317	0.00	Q	V	|	|	|	|
68+ 5	0.0317	0.00	Q	V	|	|	|	|
68+10	0.0317	0.00	Q	V	|	|	|	|
68+15	0.0317	0.00	Q	V	|	|	|	|
68+20	0.0318	0.00	Q	V	|	|	|	|
68+25	0.0318	0.00	Q	V	|	|	|	|
68+30	0.0318	0.00	Q	V	|	|	|	|
68+35	0.0318	0.00	Q	V	|	|	|	|
68+40	0.0318	0.00	Q	V	|	|	|	|
68+45	0.0318	0.00	Q	V	|	|	|	|
68+50	0.0318	0.00	Q	V	|	|	|	|
68+55	0.0318	0.00	Q	V	|	|	|	|
69+ 0	0.0318	0.00	Q	V	|	|	|	|
69+ 5	0.0319	0.00	Q	V	|	|	|	|
69+10	0.0319	0.00	Q	V	|	|	|	|
69+15	0.0319	0.00	Q	V	|	|	|	|
69+20	0.0319	0.00	Q	V	|	|	|	|
69+25	0.0319	0.00	Q	V	|	|	|	|
69+30	0.0319	0.00	Q	V	|	|	|	|
69+35	0.0319	0.00	Q	V	|	|	|	|
69+40	0.0319	0.00	Q	V	|	|	|	|
69+45	0.0319	0.00	Q	V	|	|	|	|
69+50	0.0320	0.00	Q	V	|	|	|	|
69+55	0.0320	0.00	Q	V	|	|	|	|
70+ 0	0.0320	0.00	Q	V	|	|	|	|
70+ 5	0.0320	0.00	Q	V	|	|	|	|
70+10	0.0320	0.00	Q	V	|	|	|	|
70+15	0.0320	0.00	Q	V	|	|	|	|
70+20	0.0320	0.00	Q	V	|	|	|	|
70+25	0.0320	0.00	Q	V	|	|	|	|
70+30	0.0320	0.00	Q	V	|	|	|	|
70+35	0.0320	0.00	Q	V	|	|	|	|
70+40	0.0321	0.00	Q	V	|	|	|	|
70+45	0.0321	0.00	Q	V	|	|	|	|
70+50	0.0321	0.00	Q	V	|	|	|	|
70+55	0.0321	0.00	Q	V	|	|	|	|
71+ 0	0.0321	0.00	Q	V	|	|	|	|
71+ 5	0.0321	0.00	Q	V	|	|	|	|
71+10	0.0321	0.00	Q	V	|	|	|	|
71+15	0.0321	0.00	Q	V	|	|	|	|
71+20	0.0321	0.00	Q	V	|	|	|	|
71+25	0.0321	0.00	Q	V	|	|	|	|
71+30	0.0321	0.00	Q	V	|	|	|	|
71+35	0.0322	0.00	Q	V	|	|	|	|
71+40	0.0322	0.00	Q	V	|	|	|	|
71+45	0.0322	0.00	Q	V	|	|	|	|
71+50	0.0322	0.00	Q	V	|	|	|	|
71+55	0.0322	0.00	Q	V	|	|	|	|
72+ 0	0.0322	0.00	Q	V	|	|	|	|
72+ 5	0.0322	0.00	Q	V	|	|	|	|
72+10	0.0322	0.00	Q	V	|	|	|	|
72+15	0.0323	0.00	Q	V	|	|	|	|
72+20	0.0323	0.00	Q	V	|	|	|	|
72+25	0.0323	0.01	Q	V	|	|	|	|
72+30	0.0324	0.01	Q	V	|	|	|	|
72+35	0.0324	0.01	Q	V	|	|	|	|
72+40	0.0324	0.01	Q	V	|	|	|	|
72+45	0.0325	0.01	Q	V	|	|	|	|
72+50	0.0325	0.01	Q	V	|	|	|	|
72+55	0.0326	0.01	Q	V	|	|	|	|
73+ 0	0.0326	0.01	Q	V	|	|	|	|
73+ 5	0.0326	0.01	Q	V	|	|	|	|
73+10	0.0327	0.01	Q	V	|	|	|	|
73+15	0.0327	0.01	Q	V	|	|	|	|
73+20	0.0328	0.01	Q	V	|	|	|	|
73+25	0.0328	0.01	Q	V	|	|	|	|
73+30	0.0328	0.01	Q	V	|	|	|	|
73+35	0.0329	0.01	Q	V	|	|	|	|

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73+40       0.0329      0.01  Q     V   |          |          |          |
73+45       0.0329      0.01  Q     V   |          |          |          |
73+50       0.0330      0.01  Q     V   |          |          |          |
73+55       0.0330      0.01  Q     V   |          |          |          |
74+ 0       0.0331      0.01  Q     V   |          |          |          |
74+ 5       0.0331      0.01  Q     V   |          |          |          |
74+10       0.0332      0.01  Q     V   |          |          |          |
74+15       0.0332      0.01  Q     V   |          |          |          |
74+20       0.0333      0.01  Q     V   |          |          |          |
74+25       0.0333      0.01  Q     V   |          |          |          |
74+30       0.0334      0.01  Q     V   |          |          |          |
74+35       0.0334      0.01  Q     V   |          |          |          |
74+40       0.0335      0.01  Q     V   |          |          |          |
74+45       0.0335      0.01  Q     V   |          |          |          |
74+50       0.0336      0.01  Q     V   |          |          |          |
74+55       0.0337      0.01  Q     V   |          |          |          |
75+ 0       0.0337      0.01  Q     V   |          |          |          |
75+ 5       0.0338      0.01  Q     V   |          |          |          |
75+10       0.0338      0.01  Q     V   |          |          |          |
75+15       0.0339      0.01  Q     V   |          |          |          |
75+20       0.0340      0.01  Q     V   |          |          |          |
75+25       0.0340      0.01  Q     V   |          |          |          |
75+30       0.0341      0.01  Q     V   |          |          |          |
75+35       0.0341      0.01  Q     V   |          |          |          |
75+40       0.0342      0.01  Q     V   |          |          |          |
75+45       0.0343      0.01  Q     V   |          |          |          |
75+50       0.0343      0.01  Q     V   |          |          |          |
75+55       0.0344      0.01  Q     V   |          |          |          |
76+ 0       0.0345      0.01  Q     V   |          |          |          |
76+ 5       0.0345      0.01  Q     V   |          |          |          |
76+10       0.0346      0.01  Q     V   |          |          |          |
76+15       0.0347      0.01  Q     V   |          |          |          |
76+20       0.0348      0.01  Q     V   |          |          |          |
76+25       0.0349      0.01  Q     V   |          |          |          |
76+30       0.0349      0.01  Q     V   |          |          |          |
76+35       0.0350      0.01  Q     V   |          |          |          |
76+40       0.0351      0.01  Q     V   |          |          |          |
76+45       0.0352      0.01  Q     V   |          |          |          |
76+50       0.0353      0.01  Q     V   |          |          |          |
76+55       0.0354      0.01  Q     V   |          |          |          |
77+ 0       0.0355      0.01  Q      V  |          |          |          |
77+ 5       0.0356      0.01  Q      V  |          |          |          |
77+10       0.0356      0.01  Q      V  |          |          |          |
77+15       0.0357      0.01  Q      V  |          |          |          |
77+20       0.0358      0.01  Q      V  |          |          |          |
77+25       0.0359      0.01  Q      V  |          |          |          |
77+30       0.0359      0.01  Q      V  |          |          |          |
77+35       0.0360      0.01  Q      V  |          |          |          |
77+40       0.0361      0.01  Q      V  |          |          |          |
77+45       0.0362      0.01  Q      V  |          |          |          |
77+50       0.0363      0.01  Q      V  |          |          |          |
77+55       0.0364      0.01  Q      V  |          |          |          |
78+ 0       0.0365      0.01  Q      V  |          |          |          |
78+ 5       0.0366      0.02  Q      V  |          |          |          |
78+10       0.0367      0.02  Q      V  |          |          |          |
78+15       0.0368      0.02  Q      V  |          |          |          |
78+20       0.0369      0.02  Q      V  |          |          |          |
78+25       0.0371      0.02  Q      V  |          |          |          |
78+30       0.0372      0.02  Q      V  |          |          |          |
78+35       0.0373      0.02  Q      V  |          |          |          |
78+40       0.0374      0.02  Q      V  |          |          |          |
78+45       0.0375      0.02  Q      V  |          |          |          |
78+50       0.0376      0.02  Q      V  |          |          |          |
78+55       0.0378      0.02  Q      V  |          |          |          |
79+ 0       0.0379      0.02  Q      V  |          |          |          |
79+ 5       0.0380      0.02  Q      V  |          |          |          |
79+10       0.0381      0.02  Q      V  |          |          |          |
79+15       0.0382      0.02  Q      V  |          |          |          |
79+20       0.0383      0.01  Q      V  |          |          |          |
79+25       0.0384      0.01  Q      V  |          |          |          |
79+30       0.0385      0.01  Q      V  |          |          |          |
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79+35       0.0386      0.02  Q      V  |         |         |         |
79+40       0.0388      0.03  Q      V  |         |         |         |
79+45       0.0390      0.03  Q      V  |         |         |         |
79+50       0.0393      0.04  Q      V  |         |         |         |
79+55       0.0396      0.05  Q      V  |         |         |         |
80+ 0       0.0399      0.05  Q      V  |         |         |         |
80+ 5       0.0404      0.07  Q      V  |         |         |         |
80+10       0.0410      0.08  Q       V |         |         |         |
80+15       0.0416      0.09  Q       V |         |         |         |
80+20       0.0422      0.09  Q       V |         |         |         |
80+25       0.0428      0.09  Q       V |         |         |         |
80+30       0.0434      0.09  Q       V |         |         |         |
80+35       0.0441      0.10  Q       V |         |         |         |
80+40       0.0449      0.11  Q       V |         |         |         |
80+45       0.0456      0.11  Q        V|         |         |         |
80+50       0.0464      0.12  Q        V|         |         |         |
80+55       0.0473      0.13  Q        V|         |         |         |
81+ 0       0.0482      0.13  Q        V|         |         |         |
81+ 5       0.0492      0.15  Q        V|         |         |         |
81+10       0.0504      0.16  Q        V|         |         |         |
81+15       0.0515      0.17  Q         V         |         |         |
81+20       0.0527      0.18  Q         V         |         |         |
81+25       0.0540      0.18  Q         V         |         |         |
81+30       0.0553      0.19  Q         V         |         |         |
81+35       0.0566      0.20  Q         |V        |         |         |
81+40       0.0581      0.20  Q         |V        |         |         |
81+45       0.0595      0.21  Q         |V        |         |         |
81+50       0.0610      0.22  Q         | V       |         |         |
81+55       0.0625      0.22  Q         | V       |         |         |
82+ 0       0.0641      0.23  Q         | V       |         |         |
82+ 5       0.0651      0.15  Q         | V       |         |         |
82+10       0.0659      0.11  Q         |  V      |         |         |
82+15       0.0666      0.11  Q         |  V      |         |         |
82+20       0.0674      0.11  Q         |  V      |         |         |
82+25       0.0681      0.11  Q         |  V      |         |         |
82+30       0.0688      0.11  Q         |  V      |         |         |
82+35       0.0699      0.16  Q         |  V      |         |         |
82+40       0.0713      0.19  Q         |   V     |         |         |
82+45       0.0726      0.20  Q         |   V     |         |         |
82+50       0.0740      0.20  Q         |   V     |         |         |
82+55       0.0754      0.20  Q         |   V     |         |         |
83+ 0       0.0767      0.20  Q         |    V    |         |         |
83+ 5       0.0781      0.19  Q         |    V    |         |         |
83+10       0.0793      0.18  Q         |    V    |         |         |
83+15       0.0806      0.18  Q         |    V    |         |         |
83+20       0.0819      0.19  Q         |     V   |         |         |
83+25       0.0832      0.19  Q         |     V   |         |         |
83+30       0.0844      0.19  Q         |     V   |         |         |
83+35       0.0856      0.17  Q         |     V   |         |         |
83+40       0.0867      0.16  Q         |      V  |         |         |
83+45       0.0877      0.15  Q         |      V  |         |         |
83+50       0.0889      0.16  Q         |      V  |         |         |
83+55       0.0900      0.17  Q         |      V  |         |         |
84+ 0       0.0912      0.17  Q         |       V |         |         |
84+ 5       0.0929      0.25  Q         |       V |         |         |
84+10       0.0949      0.29  |Q        |       V |         |         |
84+15       0.0970      0.30  |Q        |        V|         |         |
84+20       0.0991      0.31  |Q        |        V|         |         |
84+25       0.1013      0.32  |Q        |         V         |         |
84+30       0.1035      0.32  |Q        |         V         |         |
84+35       0.1058      0.34  |Q        |         V         |         |
84+40       0.1082      0.35  |Q        |         |V        |         |
84+45       0.1107      0.35  |Q        |         |V        |         |
84+50       0.1132      0.37  |Q        |         | V       |         |
84+55       0.1158      0.37  |Q        |         | V       |         |
85+ 0       0.1183      0.37  |Q        |         |  V      |         |
85+ 5       0.1213      0.43  |Q        |         |  V      |         |
85+10       0.1244      0.46  |Q        |         |   V     |         |
85+15       0.1276      0.46  |Q        |         |    V    |         |
85+20       0.1308      0.46  |Q        |         |    V    |         |
85+25       0.1340      0.46  |Q        |         |     V   |         |
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85+30       0.1372      0.47  |Q        |         |      V  |         |
85+35       0.1397      0.35  |Q        |         |      V  |         |
85+40       0.1416      0.28  |Q        |         |      V  |         |
85+45       0.1435      0.28  |Q        |         |       V |         |
85+50       0.1454      0.28  |Q        |         |       V |         |
85+55       0.1473      0.28  |Q        |         |        V|         |
86+ 0       0.1492      0.28  |Q        |         |        V|         |
86+ 5       0.1514      0.32  |Q        |         |        V|         |
86+10       0.1538      0.34  |Q        |         |         V         |
86+15       0.1562      0.35  |Q        |         |         V         |
86+20       0.1585      0.34  |Q        |         |         |V        |
86+25       0.1608      0.33  |Q        |         |         |V        |
86+30       0.1631      0.33  |Q        |         |         | V       |
86+35       0.1654      0.33  |Q        |         |         | V       |
86+40       0.1677      0.33  |Q        |         |         |  V      |
86+45       0.1700      0.34  |Q        |         |         |  V      |
86+50       0.1723      0.33  |Q        |         |         |   V     |
86+55       0.1745      0.32  |Q        |         |         |   V     |
87+ 0       0.1767      0.32  |Q        |         |         |   V     |
87+ 5       0.1788      0.31  |Q        |         |         |    V    |
87+10       0.1809      0.30  |Q        |         |         |    V    |
87+15       0.1830      0.30  |Q        |         |         |     V   |
87+20       0.1850      0.29  |Q        |         |         |     V   |
87+25       0.1870      0.29  |Q        |         |         |     V   |
87+30       0.1890      0.29  |Q        |         |         |      V  |
87+35       0.1907      0.25  Q         |         |         |      V  |
87+40       0.1922      0.22  Q         |         |         |      V  |
87+45       0.1938      0.22  Q         |         |         |       V |
87+50       0.1953      0.22  Q         |         |         |       V |
87+55       0.1968      0.22  Q         |         |         |       V |
88+ 0       0.1983      0.22  Q         |         |         |        V|
88+ 5       0.1990      0.10  Q         |         |         |        V|
88+10       0.1991      0.02  Q         |         |         |        V|
88+15       0.1992      0.01  Q         |         |         |        V|
88+20       0.1992      0.01  Q         |         |         |        V|
88+25       0.1993      0.01  Q         |         |         |        V|
88+30       0.1993      0.01  Q         |         |         |        V|
88+35       0.1993      0.01  Q         |         |         |        V|
88+40       0.1994      0.01  Q         |         |         |        V|
88+45       0.1994      0.01  Q         |         |         |        V|
88+50       0.1994      0.01  Q         |         |         |        V|
88+55       0.1995      0.01  Q         |         |         |        V|
89+ 0       0.1995      0.01  Q         |         |         |        V|
89+ 5       0.1996      0.01  Q         |         |         |        V|
89+10       0.1996      0.01  Q         |         |         |        V|
89+15       0.1997      0.01  Q         |         |         |        V|
89+20       0.1998      0.01  Q         |         |         |        V|
89+25       0.1998      0.01  Q         |         |         |        V|
89+30       0.1999      0.01  Q         |         |         |        V|
89+35       0.1999      0.01  Q         |         |         |        V|
89+40       0.2000      0.01  Q         |         |         |        V|
89+45       0.2001      0.01  Q         |         |         |        V|
89+50       0.2001      0.01  Q         |         |         |        V|
89+55       0.2002      0.01  Q         |         |         |        V|
90+ 0       0.2002      0.01  Q         |         |         |        V|
90+ 5       0.2003      0.01  Q         |         |         |        V|
90+10       0.2003      0.01  Q         |         |         |        V|
90+15       0.2003      0.01  Q         |         |         |        V|
90+20       0.2004      0.01  Q         |         |         |        V|
90+25       0.2004      0.01  Q         |         |         |        V|
90+30       0.2005      0.01  Q         |         |         |        V|
90+35       0.2005      0.01  Q         |         |         |        V|
90+40       0.2006      0.01  Q         |         |         |        V|
90+45       0.2006      0.01  Q         |         |         |        V|
90+50       0.2006      0.00  Q         |         |         |        V|
90+55       0.2007      0.00  Q         |         |         |        V|
91+ 0       0.2007      0.00  Q         |         |         |        V|
91+ 5       0.2007      0.00  Q         |         |         |        V|
91+10       0.2007      0.01  Q         |         |         |        V|
91+15       0.2008      0.01  Q         |         |         |        V|
91+20       0.2008      0.01  Q         |         |         |        V|
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  91+25       0.2009      0.01  Q          |          |          |         V|
  91+30       0.2009      0.01  Q          |          |          |         V|
  91+35       0.2010      0.01  Q          |          |          |         V|
  91+40       0.2010      0.01  Q          |          |          |         V|
  91+45       0.2010      0.01  Q          |          |          |         V|
  91+50       0.2011      0.00  Q          |          |          |         V|
  91+55       0.2011      0.00  Q          |          |          |         V|
  92+ 0       0.2011      0.00  Q          |          |          |         V|
  92+ 5       0.2011      0.00  Q          |          |          |         V|
  92+10       0.2012      0.01  Q          |          |          |         V|
  92+15       0.2012      0.01  Q          |          |          |         V|
  92+20       0.2013      0.01  Q          |          |          |         V|
  92+25       0.2013      0.01  Q          |          |          |         V|
  92+30       0.2013      0.01  Q          |          |          |         V|
  92+35       0.2014      0.01  Q          |          |          |         V|
  92+40       0.2014      0.01  Q          |          |          |         V|
  92+45       0.2014      0.01  Q          |          |          |         V|
  92+50       0.2015      0.00  Q          |          |          |         V|
  92+55       0.2015      0.00  Q          |          |          |         V|
  93+ 0       0.2015      0.00  Q          |          |          |         V|
  93+ 5       0.2015      0.00  Q          |          |          |         V|
  93+10       0.2016      0.01  Q          |          |          |         V|
  93+15       0.2016      0.01  Q          |          |          |         V|
  93+20       0.2016      0.00  Q          |          |          |         V|
  93+25       0.2017      0.00  Q          |          |          |         V|
  93+30       0.2017      0.00  Q          |          |          |         V|
  93+35       0.2017      0.00  Q          |          |          |         V|
  93+40       0.2018      0.01  Q          |          |          |         V|
  93+45       0.2018      0.01  Q          |          |          |         V|
  93+50       0.2018      0.00  Q          |          |          |         V|
  93+55       0.2019      0.00  Q          |          |          |         V|
  94+ 0       0.2019      0.00  Q          |          |          |         V|
  94+ 5       0.2019      0.00  Q          |          |          |         V|
  94+10       0.2019      0.01  Q          |          |          |         V|
  94+15       0.2020      0.01  Q          |          |          |         V|
  94+20       0.2020      0.00  Q          |          |          |         V|
  94+25       0.2020      0.00  Q          |          |          |         V|
  94+30       0.2021      0.00  Q          |          |          |         V|
  94+35       0.2021      0.00  Q          |          |          |         V|
  94+40       0.2021      0.00  Q          |          |          |         V|
  94+45       0.2021      0.00  Q          |          |          |         V|
  94+50       0.2022      0.00  Q          |          |          |         V|
  94+55       0.2022      0.00  Q          |          |          |         V|
  95+ 0       0.2022      0.00  Q          |          |          |         V|
  95+ 5       0.2022      0.00  Q          |          |          |         V|
  95+10       0.2022      0.00  Q          |          |          |         V|
  95+15       0.2023      0.00  Q          |          |          |         V|
  95+20       0.2023      0.00  Q          |          |          |         V|
  95+25       0.2023      0.00  Q          |          |          |         V|
  95+30       0.2023      0.00  Q          |          |          |         V|
  95+35       0.2024      0.00  Q          |          |          |         V|
  95+40       0.2024      0.00  Q          |          |          |         V|
  95+45       0.2024      0.00  Q          |          |          |         V|
  95+50       0.2024      0.00  Q          |          |          |         V|
  95+55       0.2025      0.00  Q          |          |          |         V|
  96+ 0       0.2025      0.00  Q          |          |          |         V|
  96+ 5       0.2025      0.00  Q          |          |          |         V|
  96+10       0.2025      0.00  Q          |          |          |         V|
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Program License Serial Number 4022

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 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
100 YEAR, 3 HOUR STORM
EXISTING CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     314.00(Ft.)
Length along longest watercourse measured to centroid =     160.00(Ft.)
Length along longest watercourse =      0.059 Mi.
Length along longest watercourse measured to centroid =      0.030 Mi.
Difference in elevation =       2.90(Ft.)
Slope along watercourse =     48.7643 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time =    0.026 Hr.
Lag time =     1.56 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.62 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           0.97                  0.98

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.54                  2.57

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.971(In)
Area Averaged 100-Year Rainfall =    2.540(In)

Point rain (area averaged) =    2.540(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.540(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           86.00         0.180
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.180	0.147	1.000	0.147
					Sum (F) =	0.147

Area averaged mean soil loss (F) (In/Hr) = 0.147
Minimum soil loss rate ((In/Hr)) = 0.074
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	320.782	58.717	0.598
2	0.167	641.564	36.014	0.367
3	0.250	962.346	5.268	0.054
		Sum = 100.000	Sum=	1.018

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.396	0.147	---	0.25
2	0.17	1.30	0.396	0.147	---	0.25
3	0.25	1.10	0.335	0.147	---	0.19
4	0.33	1.50	0.457	0.147	---	0.31
5	0.42	1.50	0.457	0.147	---	0.31
6	0.50	1.80	0.549	0.147	---	0.40
7	0.58	1.50	0.457	0.147	---	0.31
8	0.67	1.80	0.549	0.147	---	0.40
9	0.75	1.80	0.549	0.147	---	0.40
10	0.83	1.50	0.457	0.147	---	0.31
11	0.92	1.60	0.488	0.147	---	0.34
12	1.00	1.80	0.549	0.147	---	0.40
13	1.08	2.20	0.671	0.147	---	0.52
14	1.17	2.20	0.671	0.147	---	0.52
15	1.25	2.20	0.671	0.147	---	0.52
16	1.33	2.00	0.610	0.147	---	0.46
17	1.42	2.60	0.792	0.147	---	0.65
18	1.50	2.70	0.823	0.147	---	0.68
19	1.58	2.40	0.732	0.147	---	0.58
20	1.67	2.70	0.823	0.147	---	0.68
21	1.75	3.30	1.006	0.147	---	0.86
22	1.83	3.10	0.945	0.147	---	0.80
23	1.92	2.90	0.884	0.147	---	0.74
24	2.00	3.00	0.914	0.147	---	0.77
25	2.08	3.10	0.945	0.147	---	0.80
26	2.17	4.20	1.280	0.147	---	1.13
27	2.25	5.00	1.524	0.147	---	1.38
28	2.33	3.50	1.067	0.147	---	0.92
29	2.42	6.80	2.073	0.147	---	1.93
30	2.50	7.30	2.225	0.147	---	2.08
31	2.58	8.20	2.499	0.147	---	2.35
32	2.67	5.90	1.798	0.147	---	1.65
33	2.75	2.00	0.610	0.147	---	0.46
34	2.83	1.80	0.549	0.147	---	0.40
35	2.92	1.80	0.549	0.147	---	0.40
36	3.00	0.60	0.183	0.147	---	0.04
Sum =		100.0			Sum =	25.2

Flood volume = Effective rainfall 2.10(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 0.44(In)
Total soil loss = 0.037(Ac.Ft)
Total rainfall = 2.54(In)

```
Flood volume =        7693.8 Cubic Feet
Total soil loss =        1618.5 Cubic Feet
---------------------------------------------------------------------
 Peak flow rate of this hydrograph =      2.272(CFS)
---------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    3 - H O U R    S T O R M
               R u n o f f      H y d r o g r a p h
---------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0010      0.15  Q         |         |         |         |
  0+10       0.0027      0.24  Q         |         |         |         |
  0+15       0.0042      0.22  Q         |         |         |         |
  0+20       0.0060      0.27  |Q        |         |         |         |
  0+25       0.0082      0.31  |Q        |         |         |         |
  0+30       0.0107      0.37  |QV       |         |         |         |
  0+35       0.0131      0.35  |QV       |         |         |         |
  0+40       0.0157      0.38  |Q V      |         |         |         |
  0+45       0.0185      0.40  |Q  V     |         |         |         |
  0+50       0.0209      0.35  |Q  V     |         |         |         |
  0+55       0.0232      0.34  |Q   V    |         |         |         |
  1+ 0       0.0259      0.38  |Q   V    |         |         |         |
  1+ 5       0.0292      0.48  |Q    V   |         |         |         |
```

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: beaumontex6100.out


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
100 YEAR, 6 HOUR STORM
EXISTING CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     314.00(Ft.)
Length along longest watercourse measured to centroid =     160.00(Ft.)
Length along longest watercourse =      0.059 Mi.
Length along longest watercourse measured to centroid =      0.030 Mi.
Difference in elevation =       2.90(Ft.)
Slope along watercourse =     48.7643 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time =    0.026 Hr.
Lag time =     1.56 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.62 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           1.40                  1.41

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           3.38                  3.41

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.400(In)
Area Averaged 100-Year Rainfall =    3.380(In)

Point rain (area averaged) =    3.380(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    3.380(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           86.00         0.180
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.180	0.147	1.000	0.147
					Sum (F) =	0.147

Area averaged mean soil loss (F) (In/Hr) = 0.147
Minimum soil loss rate ((In/Hr)) = 0.074
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	320.782	58.717	0.598
2	0.167	641.564	36.014	0.367
3	0.250	962.346	5.268	0.054
		Sum = 100.000	Sum=	1.018

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.203	0.147	---	0.06
2	0.17	0.60	0.243	0.147	---	0.10
3	0.25	0.60	0.243	0.147	---	0.10
4	0.33	0.60	0.243	0.147	---	0.10
5	0.42	0.60	0.243	0.147	---	0.10
6	0.50	0.70	0.284	0.147	---	0.14
7	0.58	0.70	0.284	0.147	---	0.14
8	0.67	0.70	0.284	0.147	---	0.14
9	0.75	0.70	0.284	0.147	---	0.14
10	0.83	0.70	0.284	0.147	---	0.14
11	0.92	0.70	0.284	0.147	---	0.14
12	1.00	0.80	0.324	0.147	---	0.18
13	1.08	0.80	0.324	0.147	---	0.18
14	1.17	0.80	0.324	0.147	---	0.18
15	1.25	0.80	0.324	0.147	---	0.18
16	1.33	0.80	0.324	0.147	---	0.18
17	1.42	0.80	0.324	0.147	---	0.18
18	1.50	0.80	0.324	0.147	---	0.18
19	1.58	0.80	0.324	0.147	---	0.18
20	1.67	0.80	0.324	0.147	---	0.18
21	1.75	0.80	0.324	0.147	---	0.18
22	1.83	0.80	0.324	0.147	---	0.18
23	1.92	0.80	0.324	0.147	---	0.18
24	2.00	0.90	0.365	0.147	---	0.22
25	2.08	0.80	0.324	0.147	---	0.18
26	2.17	0.90	0.365	0.147	---	0.22
27	2.25	0.90	0.365	0.147	---	0.22
28	2.33	0.90	0.365	0.147	---	0.22
29	2.42	0.90	0.365	0.147	---	0.22
30	2.50	0.90	0.365	0.147	---	0.22
31	2.58	0.90	0.365	0.147	---	0.22
32	2.67	0.90	0.365	0.147	---	0.22
33	2.75	1.00	0.406	0.147	---	0.26
34	2.83	1.00	0.406	0.147	---	0.26
35	2.92	1.00	0.406	0.147	---	0.26
36	3.00	1.00	0.406	0.147	---	0.26
37	3.08	1.00	0.406	0.147	---	0.26
38	3.17	1.10	0.446	0.147	---	0.30
39	3.25	1.10	0.446	0.147	---	0.30
40	3.33	1.10	0.446	0.147	---	0.30
41	3.42	1.20	0.487	0.147	---	0.34
42	3.50	1.30	0.527	0.147	---	0.38

43	3.58	1.40	0.568	0.147	---	0.42
44	3.67	1.40	0.568	0.147	---	0.42
45	3.75	1.50	0.608	0.147	---	0.46
46	3.83	1.50	0.608	0.147	---	0.46
47	3.92	1.60	0.649	0.147	---	0.50
48	4.00	1.60	0.649	0.147	---	0.50
49	4.08	1.70	0.690	0.147	---	0.54
50	4.17	1.80	0.730	0.147	---	0.58
51	4.25	1.90	0.771	0.147	---	0.62
52	4.33	2.00	0.811	0.147	---	0.66
53	4.42	2.10	0.852	0.147	---	0.70
54	4.50	2.10	0.852	0.147	---	0.70
55	4.58	2.20	0.892	0.147	---	0.75
56	4.67	2.30	0.933	0.147	---	0.79
57	4.75	2.40	0.973	0.147	---	0.83
58	4.83	2.40	0.973	0.147	---	0.83
59	4.92	2.50	1.014	0.147	---	0.87
60	5.00	2.60	1.055	0.147	---	0.91
61	5.08	3.10	1.257	0.147	---	1.11
62	5.17	3.60	1.460	0.147	---	1.31
63	5.25	3.90	1.582	0.147	---	1.43
64	5.33	4.20	1.704	0.147	---	1.56
65	5.42	4.70	1.906	0.147	---	1.76
66	5.50	5.60	2.271	0.147	---	2.12
67	5.58	1.90	0.771	0.147	---	0.62
68	5.67	0.90	0.365	0.147	---	0.22
69	5.75	0.60	0.243	0.147	---	0.10
70	5.83	0.50	0.203	0.147	---	0.06
71	5.92	0.30	0.122	0.147	0.110	0.01
72	6.00	0.20	0.081	0.147	0.073	0.01
Sum =		100.0			Sum =	30.1

```
   Flood volume = Effective rainfall      2.51(In)
    times area       1.0(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
   Total soil loss =      0.87(In)
   Total soil loss =     0.074(Ac.Ft)
   Total rainfall =      3.38(In)
   Flood volume =        9189.2 Cubic Feet
   Total soil loss =        3202.9 Cubic Feet
   ---------------------------------------------------------------------
    Peak flow rate of this hydrograph =      1.999(CFS)
   ---------------------------------------------------------------------
   +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        6 - H O U R    S T O R M
                    R u n o f f     H y d r o g r a p h
   ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

   ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0008      0.08  Q         |         |         |         |
  0+15       0.0014      0.10  Q         |         |         |         |
  0+20       0.0021      0.10  Q         |         |         |         |
  0+25       0.0028      0.10  Q         |         |         |         |
  0+30       0.0036      0.12  Q         |         |         |         |
  0+35       0.0046      0.14  Q         |         |         |         |
  0+40       0.0055      0.14  QV        |         |         |         |
  0+45       0.0065      0.14  QV        |         |         |         |
  0+50       0.0074      0.14  QV        |         |         |         |
  0+55       0.0084      0.14  QV        |         |         |         |
  1+ 0       0.0095      0.16  QV        |         |         |         |
  1+ 5       0.0108      0.18  Q V       |         |         |         |
  1+10       0.0120      0.18  Q V       |         |         |         |
  1+15       0.0132      0.18  Q V       |         |         |         |
  1+20       0.0145      0.18  Q V       |         |         |         |
  1+25       0.0157      0.18  Q V       |         |         |         |
  1+30       0.0170      0.18  Q  V      |         |         |         |
  1+35       0.0182      0.18  Q  V      |         |         |         |
  1+40       0.0195      0.18  Q  V      |         |         |         |
  1+45       0.0207      0.18  Q  V      |         |         |         |
```

```
1+50       0.0219      0.18  Q   V     |         |         |         |
1+55       0.0232      0.18  Q   V     |         |         |         |
2+ 0       0.0246      0.20  Q   V     |         |         |         |
2+ 5       0.0259      0.20  Q   V     |         |         |         |
2+10       0.0274      0.21  Q    V    |         |         |         |
2+15       0.0289      0.22  Q    V    |         |         |         |
2+20       0.0304      0.22  Q    V    |         |         |         |
2+25       0.0319      0.22  Q     V   |         |         |         |
2+30       0.0335      0.22  Q     V   |         |         |         |
2+35       0.0350      0.22  Q     V   |         |         |         |
2+40       0.0365      0.22  Q     V   |         |         |         |
2+45       0.0382      0.25  Q      V  |         |         |         |
2+50       0.0400      0.26  |Q     V  |         |         |         |
2+55       0.
```

```
       U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  05/04/20 File: beaumontex24100.out


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----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

-------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



-------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
100 YEAR, 24 HOUR STORM
EXISTING CONDITION

------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     314.00(Ft.)
Length along longest watercourse measured to centroid =     160.00(Ft.)
Length along longest watercourse =      0.059 Mi.
Length along longest watercourse measured to centroid =      0.030 Mi.
Difference in elevation =       2.90(Ft.)
Slope along watercourse =     48.7643 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time =    0.026 Hr.
Lag time =     1.56 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.62 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.73                  2.76

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           6.52                  6.59

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    2.730(In)
Area Averaged 100-Year Rainfall =    6.520(In)

Point rain (area averaged) =    6.520(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    6.520(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           86.00         0.180
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.180	0.147	1.000	0.147
					Sum (F) =	0.147

Area averaged mean soil loss (F) (In/Hr) = 0.147
Minimum soil loss rate ((In/Hr)) = 0.074
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	320.782	58.717	0.598
2	0.167	641.564	36.014	0.367
3	0.250	962.346	5.268	0.054
			Sum = 100.000 Sum=	1.018

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.052	0.261	0.047	0.01
2	0.17	0.07	0.052	0.260	0.047	0.01
3	0.25	0.07	0.052	0.259	0.047	0.01
4	0.33	0.10	0.078	0.258	0.070	0.01
5	0.42	0.10	0.078	0.257	0.070	0.01
6	0.50	0.10	0.078	0.256	0.070	0.01
7	0.58	0.10	0.078	0.255	0.070	0.01
8	0.67	0.10	0.078	0.254	0.070	0.01
9	0.75	0.10	0.078	0.253	0.070	0.01
10	0.83	0.13	0.104	0.252	0.094	0.01
11	0.92	0.13	0.104	0.251	0.094	0.01
12	1.00	0.13	0.104	0.250	0.094	0.01
13	1.08	0.10	0.078	0.249	0.070	0.01
14	1.17	0.10	0.078	0.248	0.070	0.01
15	1.25	0.10	0.078	0.247	0.070	0.01
16	1.33	0.10	0.078	0.246	0.070	0.01
17	1.42	0.10	0.078	0.245	0.070	0.01
18	1.50	0.10	0.078	0.244	0.070	0.01
19	1.58	0.10	0.078	0.243	0.070	0.01
20	1.67	0.10	0.078	0.242	0.070	0.01
21	1.75	0.10	0.078	0.241	0.070	0.01
22	1.83	0.13	0.104	0.240	0.094	0.01
23	1.92	0.13	0.104	0.239	0.094	0.01
24	2.00	0.13	0.104	0.238	0.094	0.01
25	2.08	0.13	0.104	0.237	0.094	0.01
26	2.17	0.13	0.104	0.236	0.094	0.01
27	2.25	0.13	0.104	0.235	0.094	0.01
28	2.33	0.13	0.104	0.234	0.094	0.01
29	2.42	0.13	0.104	0.233	0.094	0.01
30	2.50	0.13	0.104	0.232	0.094	0.01
31	2.58	0.17	0.130	0.231	0.117	0.01
32	2.67	0.17	0.130	0.231	0.117	0.01
33	2.75	0.17	0.130	0.230	0.117	0.01
34	2.83	0.17	0.130	0.229	0.117	0.01
35	2.92	0.17	0.130	0.228	0.117	0.01
36	3.00	0.17	0.130	0.227	0.117	0.01
37	3.08	0.17	0.130	0.226	0.117	0.01
38	3.17	0.17	0.130	0.225	0.117	0.01
39	3.25	0.17	0.130	0.224	0.117	0.01
40	3.33	0.17	0.130	0.223	0.117	0.01
41	3.42	0.17	0.130	0.222	0.117	0.01
42	3.50	0.17	0.130	0.221	0.117	0.01

43	3.58	0.17	0.130	0.220	0.117	0.01
44	3.67	0.17	0.130	0.219	0.117	0.01
45	3.75	0.17	0.130	0.218	0.117	0.01
46	3.83	0.20	0.156	0.217	0.141	0.02
47	3.92	0.20	0.156	0.217	0.141	0.02
48	4.00	0.20	0.156	0.216	0.141	0.02
49	4.08	0.20	0.156	0.215	0.141	0.02
50	4.17	0.20	0.156	0.214	0.141	0.02
51	4.25	0.20	0.156	0.213	0.141	0.02
52	4.33	0.23	0.183	0.212	0.164	0.02
53	4.42	0.23	0.183	0.211	0.164	0.02
54	4.50	0.23	0.183	0.210	0.164	0.02
55	4.58	0.23	0.183	0.209	0.164	0.02
56	4.67	0.23	0.183	0.208	0.164	0.02
57	4.75	0.23	0.183	0.207	0.164	0.02
58	4.83	0.27	0.209	0.207	---	0.00
59	4.92	0.27	0.209	0.206	---	0.00
60	5.00	0.27	0.209	0.205	---	0.00
61	5.08	0.20	0.156	0.204	0.141	0.02
62	5.17	0.20	0.156	0.203	0.141	0.02
63	5.25	0.20	0.156	0.202	0.141	0.02
64	5.33	0.23	0.183	0.201	0.164	0.02
65	5.42	0.23	0.183	0.200	0.164	0.02
66	5.50	0.23	0.183	0.199	0.164	0.02
67	5.58	0.27	0.209	0.199	---	0.01
68	5.67	0.27	0.209	0.198	---	0.01
69	5.75	0.27	0.209	0.197	---	0.01
70	5.83	0.27	0.209	0.196	---	0.01
71	5.92	0.27	0.209	0.195	---	0.01
72	6.00	0.27	0.209	0.194	---	0.01
73	6.08	0.30	0.235	0.193	---	0.04
74	6.17	0.30	0.235	0.193	---	0.04
75	6.25	0.30	0.235	0.192	---	0.04
76	6.33	0.30	0.235	0.191	---	0.04
77	6.42	0.30	0.235	0.190	---	0.04
78	6.50	0.30	0.235	0.189	---	0.05
79	6.58	0.33	0.261	0.188	---	0.07
80	6.67	0.33	0.261	0.187	---	0.07
81	6.75	0.33	0.261	0.187	---	0.07
82	6.83	0.33	0.261	0.186	---	0.08
83	6.92	0.33	0.261	0.185	---	0.08
84	7.00	0.33	0.261	0.184	---	0.08
85	7.08	0.33	0.261	0.183	---	0.08
86	7.17	0.33	0.261	0.182	---	0.08
87	7.25	0.33	0.261	0.182	---	0.08
88	7.33	0.37	0.287	0.181	---	0.11
89	7.42	0.37	0.287	0.180	---	0.11
90	7.50	0.37	0.287	0.179	---	0.11
91	7.58	0.40	0.313	0.178	---	0.13
92	7.67	0.40	0.313	0.177	---	0.14
93	7.75	0.40	0.313	0.177	---	0.14
94	7.83	0.43	0.339	0.176	---	0.16
95	7.92	0.43	0.339	0.175	---	0.16
96	8.00	0.43	0.339	0.174	---	0.16
97	8.08	0.50	0.391	0.173	---	0.22
98	8.17	0.50	0.391	0.173	---	0.22
99	8.25	0.50	0.391	0.172	---	0.22
100	8.33	0.50	0.391	0.171	---	0.22
101	8.42	0.50	0.391	0.170	---	0.22
102	8.50	0.50	0.391	0.169	---	0.22
103	8.58	0.53	0.417	0.169	---	0.25
104	8.67	0.53	0.417	0.168	---	0.25
105	8.75	0.53	0.417	0.167	---	0.25
106	8.83	0.57	0.443	0.166	---	0.28
107	8.92	0.57	0.443	0.165	---	0.28
108	9.00	0.57	0.443	0.165	---	0.28
109	9.08	0.63	0.496	0.164	---	0.33
110	9.17	0.63	0.496	0.163	---	0.33
111	9.25	0.63	0.496	0.162	---	0.33
112	9.33	0.67	0.522	0.161	---	0.36
113	9.42	0.67	0.522	0.161	---	0.36

114	9.50	0.67	0.522	0.160	---	0.36
115	9.58	0.70	0.548	0.159	---	0.39
116	9.67	0.70	0.548	0.158	---	0.39
117	9.75	0.70	0.548	0.158	---	0.39
118	9.83	0.73	0.574	0.157	---	0.42
119	9.92	0.73	0.574	0.156	---	0.42
120	10.00	0.73	0.574	0.155	---	0.42
121	10.08	0.50	0.391	0.155	---	0.24
122	10.17	0.50	0.391	0.154	---	0.24
123	10.25	0.50	0.391	0.153	---	0.24
124	10.33	0.50	0.391	0.152	---	0.24
125	10.42	0.50	0.391	0.152	---	0.24
126	10.50	0.50	0.391	0.151	---	0.24
127	10.58	0.67	0.522	0.150	---	0.37
128	10.67	0.67	0.522	0.149	---	0.37
129	10.75	0.67	0.522	0.149	---	0.37
130	10.83	0.67	0.522	0.148	---	0.37
131	10.92	0.67	0.522	0.147	---	0.37
132	11.00	0.67	0.522	0.147	---	0.38
133	11.08	0.63	0.496	0.146	---	0.35
134	11.17	0.63	0.496	0.145	---	0.35
135	11.25	0.63	0.496	0.144	---	0.35
136	11.33	0.63	0.496	0.144	---	0.35
137	11.42	0.63	0.496	0.143	---	0.35
138	11.50	0.63	0.496	0.142	---	0.35
139	11.58	0.57	0.443	0.142	---	0.30
140	11.67	0.57	0.443	0.141	---	0.30
141	11.75	0.57	0.443	0.140	---	0.30
142	11.83	0.60	0.469	0.139	---	0.33
143	11.92	0.60	0.469	0.139	---	0.33
144	12.00	0.60	0.469	0.138	---	0.33
145	12.08	0.83	0.652	0.137	---	0.51
146	12.17	0.83	0.652	0.137	---	0.52
147	12.25	0.83	0.652	0.136	---	0.52
148	12.33	0.87	0.678	0.135	---	0.54
149	12.42	0.87	0.678	0.135	---	0.54
150	12.50	0.87	0.678	0.134	---	0.54
151	12.58	0.93	0.730	0.133	---	0.60
152	12.67	0.93	0.730	0.133	---	0.60
153	12.75	0.93	0.730	0.132	---	0.60
154	12.83	0.97	0.756	0.131	---	0.63
155	12.92	0.97	0.756	0.131	---	0.63
156	13.00	0.97	0.756	0.130	---	0.63
157	13.08	1.13	0.887	0.129	---	0.76
158	13.17	1.13	0.887	0.129	---	0.76
159	13.25	1.13	0.887	0.128	---	0.76
160	13.33	1.13	0.887	0.127	---	0.76
161	13.42	1.13	0.887	0.127	---	0.76
162	13.50	1.13	0.887	0.126	---	0.76
163	13.58	0.77	0.600	0.125	---	0.47
164	13.67	0.77	0.600	0.125	---	0.48
165	13.75	0.77	0.600	0.124	---	0.48
166	13.83	0.77	0.600	0.123	---	0.48
167	13.92	0.77	0.600	0.123	---	0.48
168	14.00	0.77	0.600	0.122	---	0.48
169	14.08	0.90	0.704	0.122	---	0.58
170	14.17	0.90	0.704	0.121	---	0.58
171	14.25	0.90	0.704	0.120	---	0.58
172	14.33	0.87	0.678	0.120	---	0.56
173	14.42	0.87	0.678	0.119	---	0.56
174	14.50	0.87	0.678	0.119	---	0.56
175	14.58	0.87	0.678	0.118	---	0.56
176	14.67	0.87	0.678	0.117	---	0.56
177	14.75	0.87	0.678	0.117	---	0.56
178	14.83	0.83	0.652	0.116	---	0.54
179	14.92	0.83	0.652	0.116	---	0.54
180	15.00	0.83	0.652	0.115	---	0.54
181	15.08	0.80	0.626	0.114	---	0.51
182	15.17	0.80	0.626	0.114	---	0.51
183	15.25	0.80	0.626	0.113	---	0.51
184	15.33	0.77	0.600	0.113	---	0.49

185	15.42	0.77	0.600	0.112	---	0.49
186	15.50	0.77	0.600	0.111	---	0.49
187	15.58	0.63	0.496	0.111	---	0.38
188	15.67	0.63	0.496	0.110	---	0.39
189	15.75	0.63	0.496	0.110	---	0.39
190	15.83	0.63	0.496	0.109	---	0.39
191	15.92	0.63	0.496	0.109	---	0.39
192	16.00	0.63	0.496	0.108	---	0.39
193	16.08	0.13	0.104	0.108	0.094	0.01
194	16.17	0.13	0.104	0.107	0.094	0.01
195	16.25	0.13	0.104	0.106	0.094	0.01
196	16.33	0.13	0.104	0.106	0.094	0.01
197	16.42	0.13	0.104	0.105	0.094	0.01
198	16.50	0.13	0.104	0.105	0.094	0.01
199	16.58	0.10	0.078	0.104	0.070	0.01
200	16.67	0.10	0.078	0.104	0.070	0.01
201	16.75	0.10	0.078	0.103	0.070	0.01
202	16.83	0.10	0.078	0.103	0.070	0.01
203	16.92	0.10	0.078	0.102	0.070	0.01
204	17.00	0.10	0.078	0.102	0.070	0.01
205	17.08	0.17	0.130	0.101	---	0.03
206	17.17	0.17	0.130	0.101	---	0.03
207	17.25	0.17	0.130	0.100	---	0.03
208	17.33	0.17	0.130	0.100	---	0.03
209	17.42	0.17	0.130	0.099	---	0.03
210	17.50	0.17	0.130	0.099	---	0.03
211	17.58	0.17	0.130	0.098	---	0.03
212	17.67	0.17	0.130	0.098	---	0.03
213	17.75	0.17	0.130	0.097	---	0.03
214	17.83	0.13	0.104	0.097	---	0.01
215	17.92	0.13	0.104	0.096	---	0.01
216	18.00	0.13	0.104	0.096	---	0.01
217	18.08	0.13	0.104	0.095	---	0.01
218	18.17	0.13	0.104	0.095	---	0.01
219	18.25	0.13	0.104	0.094	---	0.01
220	18.33	0.13	0.104	0.094	---	0.01
221	18.42	0.13	0.104	0.093	---	0.01
222	18.50	0.13	0.104	0.093	---	0.01
223	18.58	0.10	0.078	0.092	0.070	0.01
224	18.67	0.10	0.078	0.092	0.070	0.01
225	18.75	0.10	0.078	0.092	0.070	0.01
226	18.83	0.07	0.052	0.091	0.047	0.01
227	18.92	0.07	0.052	0.091	0.047	0.01
228	19.00	0.07	0.052	0.090	0.047	0.01
229	19.08	0.10	0.078	0.090	0.070	0.01
230	19.17	0.10	0.078	0.089	0.070	0.01
231	19.25	0.10	0.078	0.089	0.070	0.01
232	19.33	0.13	0.104	0.089	---	0.02
233	19.42	0.13	0.104	0.088	---	0.02
234	19.50	0.13	0.104	0.088	---	0.02
235	19.58	0.10	0.078	0.087	0.070	0.01
236	19.67	0.10	0.078	0.087	0.070	0.01
237	19.75	0.10	0.078	0.087	0.070	0.01
238	19.83	0.07	0.052	0.086	0.047	0.01
239	19.92	0.07	0.052	0.086	0.047	0.01
240	20.00	0.07	0.052	0.085	0.047	0.01
241	20.08	0.10	0.078	0.085	0.070	0.01
242	20.17	0.10	0.078	0.085	0.070	0.01
243	20.25	0.10	0.078	0.084	0.070	0.01
244	20.33	0.10	0.078	0.084	0.070	0.01
245	20.42	0.10	0.078	0.084	0.070	0.01
246	20.50	0.10	0.078	0.083	0.070	0.01
247	20.58	0.10	0.078	0.083	0.070	0.01
248	20.67	0.10	0.078	0.083	0.070	0.01
249	20.75	0.10	0.078	0.082	0.070	0.01
250	20.83	0.07	0.052	0.082	0.047	0.01
251	20.92	0.07	0.052	0.082	0.047	0.01
252	21.00	0.07	0.052	0.081	0.047	0.01
253	21.08	0.10	0.078	0.081	0.070	0.01
254	21.17	0.10	0.078	0.081	0.070	0.01
255	21.25	0.10	0.078	0.080	0.070	0.01

256	21.33	0.07	0.052	0.080	0.047	0.01
257	21.42	0.07	0.052	0.080	0.047	0.01
258	21.50	0.07	0.052	0.079	0.047	0.01
259	21.58	0.10	0.078	0.079	0.070	0.01
260	21.67	0.10	0.078	0.079	0.070	0.01
261	21.75	0.10	0.078	0.079	0.070	0.01
262	21.83	0.07	0.052	0.078	0.047	0.01
263	21.92	0.07	0.052	0.078	0.047	0.01
264	22.00	0.07	0.052	0.078	0.047	0.01
265	22.08	0.10	0.078	0.077	---	0.00
266	22.17	0.10	0.078	0.077	---	0.00
267	22.25	0.10	0.078	0.077	---	0.00
268	22.33	0.07	0.052	0.077	0.047	0.01
269	22.42	0.07	0.052	0.076	0.047	0.01
270	22.50	0.07	0.052	0.076	0.047	0.01
271	22.58	0.07	0.052	0.076	0.047	0.01
272	22.67	0.07	0.052	0.076	0.047	0.01
273	22.75	0.07	0.052	0.076	0.047	0.01
274	22.83	0.07	0.052	0.075	0.047	0.01
275	22.92	0.07	0.052	0.075	0.047	0.01
276	23.00	0.07	0.052	0.075	0.047	0.01
277	23.08	0.07	0.052	0.075	0.047	0.01
278	23.17	0.07	0.052	0.075	0.047	0.01
279	23.25	0.07	0.052	0.075	0.047	0.01
280	23.33	0.07	0.052	0.074	0.047	0.01
281	23.42	0.07	0.052	0.074	0.047	0.01
282	23.50	0.07	0.052	0.074	0.047	0.01
283	23.58	0.07	0.052	0.074	0.047	0.01
284	23.67	0.07	0.052	0.074	0.047	0.01
285	23.75	0.07	0.052	0.074	0.047	0.01
286	23.83	0.07	0.052	0.074	0.047	0.01
287	23.92	0.07	0.052	0.074	0.047	0.01
288	24.00	0.07	0.052	0.074	0.047	0.01
	Sum =	100.0			Sum =	45.3

```
      Flood volume = Effective rainfall      3.77(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
      Total soil loss =      2.75(In)
      Total soil loss =     0.231(Ac.Ft)
      Total rainfall =      6.52(In)
      Flood volume =       13834.6 Cubic Feet
      Total soil loss =       10069.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.774(CFS)
      ---------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ----------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0001      0.01  Q         |         |         |         |
   0+15       0.0001      0.01  Q         |         |         |         |
   0+20       0.0001      0.01  Q         |         |         |         |
   0+25       0.0002      0.01  Q         |         |         |         |
   0+30       0.0002      0.01  Q         |         |         |         |
   0+35       0.0003      0.01  Q         |         |         |         |
   0+40       0.0004      0.01  Q         |         |         |         |
   0+45       0.0004      0.01  Q         |         |         |         |
   0+50       0.0005      0.01  Q         |         |         |         |
   0+55       0.0006      0.01  Q         |         |         |         |
   1+ 0       0.0006      0.01  Q         |         |         |         |
   1+ 5       0.0007      0.01  Q         |         |         |         |
   1+10       0.0007      0.01  Q         |         |         |         |
   1+15       0.0008      0.01  Q         |         |         |         |
   1+20       0.0009      0.01  Q         |         |         |         |
   1+25       0.0009      0.01  Q         |         |         |         |
   1+30       0.0010      0.01  Q         |         |         |         |
```

1+35	0.0010	0.01	Q	|	|	|	|
1+40	0.0011	0.01	Q	|	|	|	|
1+45	0.0011	0.01	Q	|	|	|	|
1+50	0.0012	0.01	Q	|	|	|	|
1+55	0.0013	0.01	Q	|	|	|	|
2+ 0	0.0013	0.01	Q	|	|	|	|
2+ 5	0.0014	0.01	Q	|	|	|	|
2+10	0.0015	0.01	Q	|	|	|	|
2+15	0.0016	0.01	Q	|	|	|	|
2+20	0.0016	0.01	Q	|	|	|	|
2+25	0.0017	0.01	Q	|	|	|	|
2+30	0.0018	0.01	Q	|	|	|	|
2+35	0.0019	0.01	Q	|	|	|	|
2+40	0.0020	0.01	Q	|	|	|	|
2+45	0.0020	0.01	Q	|	|	|	|
2+50	0.0021	0.01	Q	|	|	|	|
2+55	0.0022	0.01	Q	|	|	|	|
3+ 0	0.0023	0.01	Q	|	|	|	|
3+ 5	0.0024	0.01	Q	|	|	|	|
3+10	0.0025	0.01	Q	|	|	|	|
3+15	0.0026	0.01	Q	|	|	|	|
3+20	0.0027	0.01	Q	|	|	|	|
3+25	0.0028	0.01	Q	|	|	|	|
3+30	0.0029	0.01	Q	|	|	|	|
3+35	0.0030	0.01	Q	|	|	|	|
3+40	0.0030	0.01	Q	|	|	|	|
3+45	0.0031	0.01	Q	|	|	|	|
3+50	0.0032	0.01	Q	|	|	|	|
3+55	0.0034	0.02	Q	|	|	|	|
4+ 0	0.0035	0.02	Q	|	|	|	|
4+ 5	0.0036	0.02	Q	|	|	|	|
4+10	0.0037	0.02	Q	|	|	|	|
4+15	0.0038	0.02	Q	|	|	|	|
4+20	0.0039	0.02	Q	|	|	|	|
4+25	0.0040	0.02	Q	|	|	|	|
4+30	0.0042	0.02	Q	|	|	|	|
4+35	0.0043	0.02	Q	|	|	|	|
4+40	0.0044	0.02	Q	|	|	|	|
4+45	0.0046	0.02	Q	|	|	|	|
4+50	0.0046	0.01	Q	|	|	|	|
4+55	0.0046	0.00	Q	|	|	|	|
5+ 0	0.0047	0.00	Q	|	|	|	|
5+ 5	0.0047	0.01	Q	|	|	|	|
5+10	0.0048	0.02	Q	|	|	|	|
5+15	0.0050	0.02	Q	|	|	|	|
5+20	0.0051	0.02	Q	|	|	|	|
5+25	0.0052	0.02	Q	|	|	|	|
5+30	0.0053	0.02	Q	|	|	|	|
5+35	0.0054	0.01	Q	|	|	|	|
5+40	0.0055	0.01	Q	|	|	|	|
5+45	0.0056	0.01	Q	|	|	|	|
5+50	0.0057	0.01	Q	|	|	|	|
5+55	0.0058	0.01	Q	|	|	|	|
6+ 0	0.0059	0.01	Q	|	|	|	|
6+ 5	0.0061	0.03	Q	|	|	|	|
6+10	0.0063	0.04	Q	|	|	|	|
6+15	0.0066	0.04	Q	|	|	|	|
6+20	0.0070	0.04	Q	|	|	|	|
6+25	0.0073	0.05	Q	|	|	|	|
6+30	0.0076	0.05	Q	|	|	|	|
6+35	0.0080	0.06	QV	|	|	|	|
6+40	0.0085	0.07	QV	|	|	|	|
6+45	0.0090	0.08	QV	|	|	|	|
6+50	0.0096	0.08	QV	|	|	|	|
6+55	0.0101	0.08	QV	|	|	|	|
7+ 0	0.0106	0.08	QV	|	|	|	|
7+ 5	0.0112	0.08	QV	|	|	|	|
7+10	0.0117	0.08	QV	|	|	|	|
7+15	0.0123	0.08	QV	|	|	|	|
7+20	0.0129	0.10	QV	|	|	|	|
7+25	0.0137	0.11	QV	|	|	|	|

```
 7+30       0.0144      0.11  QV        |         |         |         |
 7+35       0.0153      0.13  QV        |         |         |         |
 7+40       0.0162      0.14  Q V       |         |         |         |
 7+45       0.0172      0.14  Q V       |         |         |         |
 7+50       0.0182      0.15  Q V       |         |         |         |
 7+55       0.0194      0.17  Q V       |         |         |         |
 8+ 0       0.0205      0.17  Q V       |         |         |         |
 8+ 5       0.0219      0.20  Q V       |         |         |         |
 8+10       0.0234      0.22  Q V       |         |         |         |
 8+15       0.0250      0.22  Q  V      |         |         |         |
 8+20       0.0265      0.22  Q  V      |         |         |         |
 8+25       0.0281      0.22  Q  V      |         |         |         |
 8+30       0.0296      0.23  Q  V      |         |         |         |
 8+35       0.0313      0.24  Q  V      |         |         |         |
 8+40       0.0330      0.25  |Q  V     |         |         |         |
 8+45       0.0348      0.25  |Q  V     |         |         |         |
 8+50       0.0366      0.27  |Q  V     |         |         |         |
 8+55       0.0386      0.28  |Q  V     |         |         |         |
 9+ 0       0.0405      0.28  |Q   V    |         |         |         |
 9+ 5       0.0427      0.32  |Q   V    |         |         |         |
 9+10       0.0450      0.34  |Q   V    |         |         |         |
 9+15       0.0473      0.34  |Q   V    |         |         |         |
 9+20       0.0498      0.36  |Q    V   |         |         |         |
 9+25       0.0523      0.37  |Q    V   |         |         |         |
 9+30       0.0548      0.37  |Q    V   |         |         |         |
 9+35       0.0575      0.38  |Q     V  |         |         |         |
 9+40       0.0602      0.39  |Q     V  |         |         |         |
 9+45       0.0629      0.40  |Q     V  |         |         |         |
 9+50       0.0658      0.41  |Q      V |         |         |         |
 9+55       0.0687      0.42  |Q      V |         |         |         |
10+ 0       0.0716      0.43  |Q       V|         |         |         |
10+ 5       0.0738      0.32  |Q       V|         |         |         |
10+10       0.0755      0.25  |Q       V|         |         |         |
10+15       0.0772      0.24  Q        V|         |         |         |
10+20       0.0789      0.24  Q        V|         |         |         |
10+25       0.0806      0.24  Q         V         |         |         |
10+30       0.0822      0.24  Q         V         |         |         |
10+35       0.0845      0.32  |Q        V         |         |         |
10+40       0.0870      0.37  |Q        V         |         |         |
10+45       0.0896      0.38  |Q        |V        |         |         |
10+50       0.0923      0.38  |Q        |V        |         |         |
10+55       0.0949      0.38  |Q        |V        |         |         |
11+ 0       0.0975      0.38  |Q        | V       |         |         |
11+ 5       0.1000      0.37  |Q        | V       |         |         |
11+10       0.1025      0.36  |Q        | V       |         |         |
11+15       0.1050      0.36  |Q        |  V      |         |         |
11+20       0.1074      0.36  |Q        |  V      |         |         |
11+25       0.1099      0.36  |Q        |  V      |         |         |
11+30       0.1124      0.36  |Q        |   V     |         |         |
11+35       0.1146      0.33  |Q        |   V     |         |         |
11+40       0.1168      0.31  |Q        |   V     |         |         |
11+45       0.1189      0.31  |Q        |   V     |         |         |
11+50       0.1211      0.32  |Q        |    V    |         |         |
11+55       0.1235      0.34  |Q        |    V    |         |         |
12+ 0       0.1258      0.34  |Q        |    V    |         |         |
12+ 5       0.1289      0.45  |Q        |     V   |         |         |
12+10       0.1324      0.51  | Q       |     V   |         |         |
12+15       0.1360      0.53  | Q       |      V  |         |         |
12+20       0.1397      0.54  | Q       |      V  |         |         |
12+25       0.1435      0.55  | Q       |       V |         |         |
12+30       0.1474      0.55  | Q       |       V |         |         |
12+35       0.1514      0.59  | Q       |        V|         |         |
12+40       0.1556      0.61  | Q       |        V|         |         |
12+45       0.1598      0.61  | Q       |         V         |         |
12+50       0.1641      0.63  | Q       |         V         |         |
12+55       0.1684      0.64  | Q       |         |V        |         |
13+ 0       0.1728      0.64  | Q       |         |V        |         |
13+ 5       0.1778      0.72  | Q       |         | V       |         |
13+10       0.1830      0.76  |  Q      |         |  V      |         |
13+15       0.1883      0.77  |  Q      |         |  V      |         |
13+20       0.1937      0.77  |  Q      |         |   V     |         |
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13+25       0.1990      0.77  |  Q       |          |    V    |          |
13+30       0.2043      0.77  |  Q       |          |    V    |          |
13+35       0.2085      0.60  | Q        |          |     V   |          |
13+40       0.2119      0.50  |Q         |          |     V   |          |
13+45       0.2153      0.48  |Q         |          |      V  |          |
13+50       0.2186      0.48  |Q         |          |      V  |          |
13+55       0.2219      0.49  |Q         |          |      V  |          |
14+ 0       0.2253      0.49  |Q         |          |       V |          |
14+ 5       0.2291      0.55  | Q        |          |       V |          |
14+10       0.2331      0.59  | Q        |          |        V|          |
14+15       0.2372      0.59  | Q        |          |        V|          |
14+20       0.2412      0.58  | Q        |          |         V          |
14+25       0.2451      0.57  | Q        |          |         V          |
14+30       0.2491      0.57  | Q        |          |         |V         |
14+35       0.2530      0.57  | Q        |          |         |V         |
14+40       0.2569      0.57  | Q        |          |         | V        |
14+45       0.2608      0.57  | Q        |          |         | V        |
14+50       0.2647      0.56  | Q        |          |         |  V       |
14+55       0.2685      0.55  | Q        |          |         |  V       |
15+ 0       0.2722      0.55  | Q        |          |         |   V      |
15+ 5       0.2759      0.53  | Q        |          |         |   V      |
15+10       0.2795      0.52  | Q        |          |         |    V     |
15+15       0.2831      0.52  | Q        |          |         |    V     |
15+20       0.2866      0.51  | Q        |          |         |     V    |
15+25       0.2900      0.50  |Q         |          |         |     V    |
15+30       0.2934      0.50  |Q         |          |         |     V    |
15+35       0.2964      0.44  |Q         |          |         |      V   |
15+40       0.2992      0.40  |Q         |          |         |      V   |
15+45       0.3019      0.39  |Q         |          |         |       V  |
15+50       0.3046      0.39  |Q         |          |         |       V  |
15+55       0.3073      0.39  |Q         |          |         |       V  |
16+ 0       0.3100      0.39  |Q         |          |         |        V|
16+ 5       0.3112      0.17  Q          |          |         |        V|
16+10       0.3114      0.03  Q          |          |         |        V|
16+15       0.3114      0.01  Q          |          |         |        V|
16+20       0.3115      0.01  Q          |          |         |        V|
16+25       0.3116      0.01  Q          |          |         |        V|
16+30       0.3117      0.01  Q          |          |         |        V|
16+35       0.3117      0.01  Q          |          |         |        V|
16+40       0.3118      0.01  Q          |          |         |        V|
16+45       0.3118      0.01  Q          |          |         |        V|
16+50       0.3119      0.01  Q          |          |         |        V|
16+55       0.3119      0.01  Q          |          |         |        V|
17+ 0       0.3120      0.01  Q          |          |         |        V|
17+ 5       0.3121      0.02  Q          |          |         |        V|
17+10       0.3123      0.03  Q          |          |         |        V|
17+15       0.3126      0.03  Q          |          |         |        V|
17+20       0.3128      0.03  Q          |          |         |        V|
17+25       0.3130      0.03  Q          |          |         |        V|
17+30       0.3132      0.03  Q          |          |         |        V|
17+35       0.3134      0.03  Q          |          |         |        V|
17+40       0.3137      0.03  Q          |          |         |        V|
17+45       0.3139      0.03  Q          |          |         |        V|
17+50       0.3140      0.02  Q          |          |         |        V|
17+55       0.3141      0.01  Q          |          |         |        V|
18+ 0       0.3141      0.01  Q          |          |         |        V|
18+ 5       0.3142      0.01  Q          |          |         |        V|
18+10       0.3143      0.01  Q          |          |         |        V|
18+15       0.3143      0.01  Q          |          |         |        V|
18+20       0.3144      0.01  Q          |          |         |        V|
18+25       0.3145      0.01  Q          |          |         |        V|
18+30       0.3146      0.01  Q          |          |         |        V|
18+35       0.3146      0.01  Q          |          |         |        V|
18+40       0.3147      0.01  Q          |          |         |        V|
18+45       0.3147      0.01  Q          |          |         |        V|
18+50       0.3148      0.01  Q          |          |         |        V|
18+55       0.3148      0.01  Q          |          |         |        V|
19+ 0       0.3149      0.01  Q          |          |         |        V|
19+ 5       0.3149      0.01  Q          |          |         |        V|
19+10       0.3150      0.01  Q          |          |         |        V|
19+15       0.3150      0.01  Q          |          |         |        V|
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  19+20       0.3151      0.01  Q          |          |          |         V|
  19+25       0.3152      0.02  Q          |          |          |         V|
  19+30       0.3153      0.02  Q          |          |          |         V|
  19+35       0.3154      0.01  Q          |          |          |         V|
  19+40       0.3155      0.01  Q          |          |          |         V|
  19+45       0.3155      0.01  Q          |          |          |         V|
  19+50       0.3156      0.01  Q          |          |          |         V|
  19+55       0.3156      0.01  Q          |          |          |         V|
  20+ 0       0.3156      0.01  Q          |          |          |         V|
  20+ 5       0.3157      0.01  Q          |          |          |         V|
  20+10       0.3157      0.01  Q          |          |          |         V|
  20+15       0.3158      0.01  Q          |          |          |         V|
  20+20       0.3158      0.01  Q          |          |          |         V|
  20+25       0.3159      0.01  Q          |          |          |         V|
  20+30       0.3160      0.01  Q          |          |          |         V|
  20+35       0.3160      0.01  Q          |          |          |         V|
  20+40       0.3161      0.01  Q          |          |          |         V|
  20+45       0.3161      0.01  Q          |          |          |         V|
  20+50       0.3162      0.01  Q          |          |          |         V|
  20+55       0.3162      0.01  Q          |          |          |         V|
  21+ 0       0.3162      0.01  Q          |          |          |         V|
  21+ 5       0.3163      0.01  Q          |          |          |         V|
  21+10       0.3163      0.01  Q          |          |          |         V|
  21+15       0.3164      0.01  Q          |          |          |         V|
  21+20       0.3164      0.01  Q          |          |          |         V|
  21+25       0.3165      0.01  Q          |          |          |         V|
  21+30       0.3165      0.01  Q          |          |          |         V|
  21+35       0.3166      0.01  Q          |          |          |         V|
  21+40       0.3166      0.01  Q          |          |          |         V|
  21+45       0.3167      0.01  Q          |          |          |         V|
  21+50       0.3167      0.01  Q          |          |          |         V|
  21+55       0.3168      0.01  Q          |          |          |         V|
  22+ 0       0.3168      0.01  Q          |          |          |         V|
  22+ 5       0.3168      0.00  Q          |          |          |         V|
  22+10       0.3168      0.00  Q          |          |          |         V|
  22+15       0.3168      0.00  Q          |          |          |         V|
  22+20       0.3169      0.00  Q          |          |          |         V|
  22+25       0.3169      0.01  Q          |          |          |         V|
  22+30       0.3169      0.01  Q          |          |          |         V|
  22+35       0.3170      0.01  Q          |          |          |         V|
  22+40       0.3170      0.01  Q          |          |          |         V|
  22+45       0.3170      0.01  Q          |          |          |         V|
  22+50       0.3171      0.01  Q          |          |          |         V|
  22+55       0.3171      0.01  Q          |          |          |         V|
  23+ 0       0.3171      0.01  Q          |          |          |         V|
  23+ 5       0.3172      0.01  Q          |          |          |         V|
  23+10       0.3172      0.01  Q          |          |          |         V|
  23+15       0.3173      0.01  Q          |          |          |         V|
  23+20       0.3173      0.01  Q          |          |          |         V|
  23+25       0.3173      0.01  Q          |          |          |         V|
  23+30       0.3174      0.01  Q          |          |          |         V|
  23+35       0.3174      0.01  Q          |          |          |         V|
  23+40       0.3174      0.01  Q          |          |          |         V|
  23+45       0.3175      0.01  Q          |          |          |         V|
  23+50       0.3175      0.01  Q          |          |          |         V|
  23+55       0.3175      0.01  Q          |          |          |         V|
  24+ 0       0.3176      0.01  Q          |          |          |         V|
  24+ 5       0.3176      0.00  Q          |          |          |         V|
  24+10       0.3176      0.00  Q          |          |          |          V
-----------------------------------------------------------------------
```

SECTION 3 – DEVELOPED CONDITION HYDROLOGY

Developed Condition Unit Hydrograph Method

2 Year, 24 Hour Storm

10 Year - 3 Hour, 6 Hour, 24 Hour Storm

100 Year - 3 Hour, 6 Hour, 24 Hour Storm

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: BEAUMONTDEV242.out


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----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
2 YEAR,24 HOUR STORM
DEVELOPED CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     525.00(Ft.)
Length along longest watercourse measured to centroid =     345.00(Ft.)
Length along longest watercourse =      0.099 Mi.
Length along longest watercourse measured to centroid =      0.065 Mi.
Difference in elevation =       5.44(Ft.)
Slope along watercourse =     54.7109 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.025 Hr.
Lag time =     1.49 Min.
25% of lag time =     0.37 Min.
40% of lag time =     0.60 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.73                  2.76

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           6.52                  6.59

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    2.730(In)
Area Averaged 100-Year Rainfall =    6.520(In)

Point rain (area averaged) =    2.730(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.730(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           56.00         0.780
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	56.0	0.511	0.780	0.152	1.000	0.152
					Sum (F) =	0.152

Area averaged mean soil loss (F) (In/Hr) = 0.152
Minimum soil loss rate ((In/Hr)) = 0.076
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.276

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	335.676	60.069	0.611
2	0.167	671.352	35.248	0.359
3	0.250	1007.028	4.683	0.048
		Sum = 100.000	Sum=	1.018

Storm Event 4 Effective Rainfall = 0.409(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.003	0.270	0.001	0.00
2	0.17	0.07	0.003	0.269	0.001	0.00
3	0.25	0.07	0.003	0.268	0.001	0.00
4	0.33	0.10	0.005	0.267	0.001	0.00
5	0.42	0.10	0.005	0.266	0.001	0.00
6	0.50	0.10	0.005	0.265	0.001	0.00
7	0.58	0.10	0.005	0.264	0.001	0.00
8	0.67	0.10	0.005	0.263	0.001	0.00
9	0.75	0.10	0.005	0.262	0.001	0.00
10	0.83	0.13	0.007	0.261	0.002	0.00
11	0.92	0.13	0.007	0.259	0.002	0.00
12	1.00	0.13	0.007	0.258	0.002	0.00
13	1.08	0.10	0.005	0.257	0.001	0.00
14	1.17	0.10	0.005	0.256	0.001	0.00
15	1.25	0.10	0.005	0.255	0.001	0.00
16	1.33	0.10	0.005	0.254	0.001	0.00
17	1.42	0.10	0.005	0.253	0.001	0.00
18	1.50	0.10	0.005	0.252	0.001	0.00
19	1.58	0.10	0.005	0.251	0.001	0.00
20	1.67	0.10	0.005	0.250	0.001	0.00
21	1.75	0.10	0.005	0.249	0.001	0.00
22	1.83	0.13	0.007	0.248	0.002	0.00
23	1.92	0.13	0.007	0.247	0.002	0.00
24	2.00	0.13	0.007	0.246	0.002	0.00
25	2.08	0.13	0.007	0.245	0.002	0.00
26	2.17	0.13	0.007	0.244	0.002	0.00
27	2.25	0.13	0.007	0.243	0.002	0.00
28	2.33	0.13	0.007	0.242	0.002	0.00
29	2.42	0.13	0.007	0.241	0.002	0.00
30	2.50	0.13	0.007	0.240	0.002	0.00
31	2.58	0.17	0.008	0.239	0.002	0.01
32	2.67	0.17	0.008	0.238	0.002	0.01
33	2.75	0.17	0.008	0.237	0.002	0.01
34	2.83	0.17	0.008	0.236	0.002	0.01
35	2.92	0.17	0.008	0.236	0.002	0.01
36	3.00	0.17	0.008	0.235	0.002	0.01
37	3.08	0.17	0.008	0.234	0.002	0.01
38	3.17	0.17	0.008	0.233	0.002	0.01

39	3.25	0.17	0.008	0.232	0.002	0.01
40	3.33	0.17	0.008	0.231	0.002	0.01
41	3.42	0.17	0.008	0.230	0.002	0.01
42	3.50	0.17	0.008	0.229	0.002	0.01
43	3.58	0.17	0.008	0.228	0.002	0.01
44	3.67	0.17	0.008	0.227	0.002	0.01
45	3.75	0.17	0.008	0.226	0.002	0.01
46	3.83	0.20	0.010	0.225	0.003	0.01
47	3.92	0.20	0.010	0.224	0.003	0.01
48	4.00	0.20	0.010	0.223	0.003	0.01
49	4.08	0.20	0.010	0.222	0.003	0.01
50	4.17	0.20	0.010	0.221	0.003	0.01
51	4.25	0.20	0.010	0.220	0.003	0.01
52	4.33	0.23	0.011	0.219	0.003	0.01
53	4.42	0.23	0.011	0.218	0.003	0.01
54	4.50	0.23	0.011	0.217	0.003	0.01
55	4.58	0.23	0.011	0.216	0.003	0.01
56	4.67	0.23	0.011	0.216	0.003	0.01
57	4.75	0.23	0.011	0.215	0.003	0.01
58	4.83	0.27	0.013	0.214	0.004	0.01
59	4.92	0.27	0.013	0.213	0.004	0.01
60	5.00	0.27	0.013	0.212	0.004	0.01
61	5.08	0.20	0.010	0.211	0.003	0.01
62	5.17	0.20	0.010	0.210	0.003	0.01
63	5.25	0.20	0.010	0.209	0.003	0.01
64	5.33	0.23	0.011	0.208	0.003	0.01
65	5.42	0.23	0.011	0.207	0.003	0.01
66	5.50	0.23	0.011	0.206	0.003	0.01
67	5.58	0.27	0.013	0.205	0.004	0.01
68	5.67	0.27	0.013	0.205	0.004	0.01
69	5.75	0.27	0.013	0.204	0.004	0.01
70	5.83	0.27	0.013	0.203	0.004	0.01
71	5.92	0.27	0.013	0.202	0.004	0.01
72	6.00	0.27	0.013	0.201	0.004	0.01
73	6.08	0.30	0.015	0.200	0.004	0.01
74	6.17	0.30	0.015	0.199	0.004	0.01
75	6.25	0.30	0.015	0.198	0.004	0.01
76	6.33	0.30	0.015	0.197	0.004	0.01
77	6.42	0.30	0.015	0.196	0.004	0.01
78	6.50	0.30	0.015	0.196	0.004	0.01
79	6.58	0.33	0.016	0.195	0.005	0.01
80	6.67	0.33	0.016	0.194	0.005	0.01
81	6.75	0.33	0.016	0.193	0.005	0.01
82	6.83	0.33	0.016	0.192	0.005	0.01
83	6.92	0.33	0.016	0.191	0.005	0.01
84	7.00	0.33	0.016	0.190	0.005	0.01
85	7.08	0.33	0.016	0.190	0.005	0.01
86	7.17	0.33	0.016	0.189	0.005	0.01
87	7.25	0.33	0.016	0.188	0.005	0.01
88	7.33	0.37	0.018	0.187	0.005	0.01
89	7.42	0.37	0.018	0.186	0.005	0.01
90	7.50	0.37	0.018	0.185	0.005	0.01
91	7.58	0.40	0.020	0.184	0.005	0.01
92	7.67	0.40	0.020	0.184	0.005	0.01
93	7.75	0.40	0.020	0.183	0.005	0.01
94	7.83	0.43	0.021	0.182	0.006	0.02
95	7.92	0.43	0.021	0.181	0.006	0.02
96	8.00	0.43	0.021	0.180	0.006	0.02
97	8.08	0.50	0.025	0.179	0.007	0.02
98	8.17	0.50	0.025	0.178	0.007	0.02
99	8.25	0.50	0.025	0.178	0.007	0.02
100	8.33	0.50	0.025	0.177	0.007	0.02
101	8.42	0.50	0.025	0.176	0.007	0.02
102	8.50	0.50	0.025	0.175	0.007	0.02
103	8.58	0.53	0.026	0.174	0.007	0.02
104	8.67	0.53	0.026	0.174	0.007	0.02
105	8.75	0.53	0.026	0.173	0.007	0.02
106	8.83	0.57	0.028	0.172	0.008	0.02
107	8.92	0.57	0.028	0.171	0.008	0.02
108	9.00	0.57	0.028	0.170	0.008	0.02
109	9.08	0.63	0.031	0.169	0.009	0.02

110	9.17	0.63	0.031	0.169	0.009	0.02
111	9.25	0.63	0.031	0.168	0.009	0.02
112	9.33	0.67	0.033	0.167	0.009	0.02
113	9.42	0.67	0.033	0.166	0.009	0.02
114	9.50	0.67	0.033	0.165	0.009	0.02
115	9.58	0.70	0.034	0.165	0.009	0.02
116	9.67	0.70	0.034	0.164	0.009	0.02
117	9.75	0.70	0.034	0.163	0.009	0.02
118	9.83	0.73	0.036	0.162	0.010	0.03
119	9.92	0.73	0.036	0.162	0.010	0.03
120	10.00	0.73	0.036	0.161	0.010	0.03
121	10.08	0.50	0.025	0.160	0.007	0.02
122	10.17	0.50	0.025	0.159	0.007	0.02
123	10.25	0.50	0.025	0.158	0.007	0.02
124	10.33	0.50	0.025	0.158	0.007	0.02
125	10.42	0.50	0.025	0.157	0.007	0.02
126	10.50	0.50	0.025	0.156	0.007	0.02
127	10.58	0.67	0.033	0.155	0.009	0.02
128	10.67	0.67	0.033	0.155	0.009	0.02
129	10.75	0.67	0.033	0.154	0.009	0.02
130	10.83	0.67	0.033	0.153	0.009	0.02
131	10.92	0.67	0.033	0.152	0.009	0.02
132	11.00	0.67	0.033	0.152	0.009	0.02
133	11.08	0.63	0.031	0.151	0.009	0.02
134	11.17	0.63	0.031	0.150	0.009	0.02
135	11.25	0.63	0.031	0.149	0.009	0.02
136	11.33	0.63	0.031	0.149	0.009	0.02
137	11.42	0.63	0.031	0.148	0.009	0.02
138	11.50	0.63	0.031	0.147	0.009	0.02
139	11.58	0.57	0.028	0.146	0.008	0.02
140	11.67	0.57	0.028	0.146	0.008	0.02
141	11.75	0.57	0.028	0.145	0.008	0.02
142	11.83	0.60	0.029	0.144	0.008	0.02
143	11.92	0.60	0.029	0.144	0.008	0.02
144	12.00	0.60	0.029	0.143	0.008	0.02
145	12.08	0.83	0.041	0.142	0.011	0.03
146	12.17	0.83	0.041	0.141	0.011	0.03
147	12.25	0.83	0.041	0.141	0.011	0.03
148	12.33	0.87	0.043	0.140	0.012	0.03
149	12.42	0.87	0.043	0.139	0.012	0.03
150	12.50	0.87	0.043	0.139	0.012	0.03
151	12.58	0.93	0.046	0.138	0.013	0.03
152	12.67	0.93	0.046	0.137	0.013	0.03
153	12.75	0.93	0.046	0.136	0.013	0.03
154	12.83	0.97	0.048	0.136	0.013	0.03
155	12.92	0.97	0.048	0.135	0.013	0.03
156	13.00	0.97	0.048	0.134	0.013	0.03
157	13.08	1.13	0.056	0.134	0.015	0.04
158	13.17	1.13	0.056	0.133	0.015	0.04
159	13.25	1.13	0.056	0.132	0.015	0.04
160	13.33	1.13	0.056	0.132	0.015	0.04
161	13.42	1.13	0.056	0.131	0.015	0.04
162	13.50	1.13	0.056	0.130	0.015	0.04
163	13.58	0.77	0.038	0.130	0.010	0.03
164	13.67	0.77	0.038	0.129	0.010	0.03
165	13.75	0.77	0.038	0.128	0.010	0.03
166	13.83	0.77	0.038	0.128	0.010	0.03
167	13.92	0.77	0.038	0.127	0.010	0.03
168	14.00	0.77	0.038	0.126	0.010	0.03
169	14.08	0.90	0.044	0.126	0.012	0.03
170	14.17	0.90	0.044	0.125	0.012	0.03
171	14.25	0.90	0.044	0.125	0.012	0.03
172	14.33	0.87	0.043	0.124	0.012	0.03
173	14.42	0.87	0.043	0.123	0.012	0.03
174	14.50	0.87	0.043	0.123	0.012	0.03
175	14.58	0.87	0.043	0.122	0.012	0.03
176	14.67	0.87	0.043	0.121	0.012	0.03
177	14.75	0.87	0.043	0.121	0.012	0.03
178	14.83	0.83	0.041	0.120	0.011	0.03
179	14.92	0.83	0.041	0.120	0.011	0.03
180	15.00	0.83	0.041	0.119	0.011	0.03

181	15.08	0.80	0.039	0.118	0.011	0.03
182	15.17	0.80	0.039	0.118	0.011	0.03
183	15.25	0.80	0.039	0.117	0.011	0.03
184	15.33	0.77	0.038	0.116	0.010	0.03
185	15.42	0.77	0.038	0.116	0.010	0.03
186	15.50	0.77	0.038	0.115	0.010	0.03
187	15.58	0.63	0.031	0.115	0.009	0.02
188	15.67	0.63	0.031	0.114	0.009	0.02
189	15.75	0.63	0.031	0.114	0.009	0.02
190	15.83	0.63	0.031	0.113	0.009	0.02
191	15.92	0.63	0.031	0.112	0.009	0.02
192	16.00	0.63	0.031	0.112	0.009	0.02
193	16.08	0.13	0.007	0.111	0.002	0.00
194	16.17	0.13	0.007	0.111	0.002	0.00
195	16.25	0.13	0.007	0.110	0.002	0.00
196	16.33	0.13	0.007	0.110	0.002	0.00
197	16.42	0.13	0.007	0.109	0.002	0.00
198	16.50	0.13	0.007	0.108	0.002	0.00
199	16.58	0.10	0.005	0.108	0.001	0.00
200	16.67	0.10	0.005	0.107	0.001	0.00
201	16.75	0.10	0.005	0.107	0.001	0.00
202	16.83	0.10	0.005	0.106	0.001	0.00
203	16.92	0.10	0.005	0.106	0.001	0.00
204	17.00	0.10	0.005	0.105	0.001	0.00
205	17.08	0.17	0.008	0.105	0.002	0.01
206	17.17	0.17	0.008	0.104	0.002	0.01
207	17.25	0.17	0.008	0.104	0.002	0.01
208	17.33	0.17	0.008	0.103	0.002	0.01
209	17.42	0.17	0.008	0.103	0.002	0.01
210	17.50	0.17	0.008	0.102	0.002	0.01
211	17.58	0.17	0.008	0.102	0.002	0.01
212	17.67	0.17	0.008	0.101	0.002	0.01
213	17.75	0.17	0.008	0.100	0.002	0.01
214	17.83	0.13	0.007	0.100	0.002	0.00
215	17.92	0.13	0.007	0.100	0.002	0.00
216	18.00	0.13	0.007	0.099	0.002	0.00
217	18.08	0.13	0.007	0.099	0.002	0.00
218	18.17	0.13	0.007	0.098	0.002	0.00
219	18.25	0.13	0.007	0.098	0.002	0.00
220	18.33	0.13	0.007	0.097	0.002	0.00
221	18.42	0.13	0.007	0.097	0.002	0.00
222	18.50	0.13	0.007	0.096	0.002	0.00
223	18.58	0.10	0.005	0.096	0.001	0.00
224	18.67	0.10	0.005	0.095	0.001	0.00
225	18.75	0.10	0.005	0.095	0.001	0.00
226	18.83	0.07	0.003	0.094	0.001	0.00
227	18.92	0.07	0.003	0.094	0.001	0.00
228	19.00	0.07	0.003	0.093	0.001	0.00
229	19.08	0.10	0.005	0.093	0.001	0.00
230	19.17	0.10	0.005	0.093	0.001	0.00
231	19.25	0.10	0.005	0.092	0.001	0.00
232	19.33	0.13	0.007	0.092	0.002	0.00
233	19.42	0.13	0.007	0.091	0.002	0.00
234	19.50	0.13	0.007	0.091	0.002	0.00
235	19.58	0.10	0.005	0.090	0.001	0.00
236	19.67	0.10	0.005	0.090	0.001	0.00
237	19.75	0.10	0.005	0.090	0.001	0.00
238	19.83	0.07	0.003	0.089	0.001	0.00
239	19.92	0.07	0.003	0.089	0.001	0.00
240	20.00	0.07	0.003	0.088	0.001	0.00
241	20.08	0.10	0.005	0.088	0.001	0.00
242	20.17	0.10	0.005	0.088	0.001	0.00
243	20.25	0.10	0.005	0.087	0.001	0.00
244	20.33	0.10	0.005	0.087	0.001	0.00
245	20.42	0.10	0.005	0.086	0.001	0.00
246	20.50	0.10	0.005	0.086	0.001	0.00
247	20.58	0.10	0.005	0.086	0.001	0.00
248	20.67	0.10	0.005	0.085	0.001	0.00
249	20.75	0.10	0.005	0.085	0.001	0.00
250	20.83	0.07	0.003	0.085	0.001	0.00
251	20.92	0.07	0.003	0.084	0.001	0.00

252	21.00	0.07	0.003	0.084	0.001	0.00
253	21.08	0.10	0.005	0.084	0.001	0.00
254	21.17	0.10	0.005	0.083	0.001	0.00
255	21.25	0.10	0.005	0.083	0.001	0.00
256	21.33	0.07	0.003	0.083	0.001	0.00
257	21.42	0.07	0.003	0.082	0.001	0.00
258	21.50	0.07	0.003	0.082	0.001	0.00
259	21.58	0.10	0.005	0.082	0.001	0.00
260	21.67	0.10	0.005	0.081	0.001	0.00
261	21.75	0.10	0.005	0.081	0.001	0.00
262	21.83	0.07	0.003	0.081	0.001	0.00
263	21.92	0.07	0.003	0.081	0.001	0.00
264	22.00	0.07	0.003	0.080	0.001	0.00
265	22.08	0.10	0.005	0.080	0.001	0.00
266	22.17	0.10	0.005	0.080	0.001	0.00
267	22.25	0.10	0.005	0.080	0.001	0.00
268	22.33	0.07	0.003	0.079	0.001	0.00
269	22.42	0.07	0.003	0.079	0.001	0.00
270	22.50	0.07	0.003	0.079	0.001	0.00
271	22.58	0.07	0.003	0.079	0.001	0.00
272	22.67	0.07	0.003	0.078	0.001	0.00
273	22.75	0.07	0.003	0.078	0.001	0.00
274	22.83	0.07	0.003	0.078	0.001	0.00
275	22.92	0.07	0.003	0.078	0.001	0.00
276	23.00	0.07	0.003	0.078	0.001	0.00
277	23.08	0.07	0.003	0.077	0.001	0.00
278	23.17	0.07	0.003	0.077	0.001	0.00
279	23.25	0.07	0.003	0.077	0.001	0.00
280	23.33	0.07	0.003	0.077	0.001	0.00
281	23.42	0.07	0.003	0.077	0.001	0.00
282	23.50	0.07	0.003	0.077	0.001	0.00
283	23.58	0.07	0.003	0.077	0.001	0.00
284	23.67	0.07	0.003	0.076	0.001	0.00
285	23.75	0.07	0.003	0.076	0.001	0.00
286	23.83	0.07	0.003	0.076	0.001	0.00
287	23.92	0.07	0.003	0.076	0.001	0.00
288	24.00	0.07	0.003	0.076	0.001	0.00
	Sum =	100.0			Sum =	3.6

```
      Flood volume = Effective rainfall      0.30(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
      Total soil loss =      0.11(In)
      Total soil loss =     0.010(Ac.Ft)
      Total rainfall =      0.41(In)
      Flood volume =        1087.0 Cubic Feet
      Total soil loss =         414.4 Cubic Feet
----------------------------------------------------------------------
          Storm Event 3   Effective Rainfall =   0.519(In)
----------------------------------------------------------------------
```

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.004	0.270	0.001	0.00
2	0.17	0.07	0.004	0.269	0.001	0.00
3	0.25	0.07	0.004	0.268	0.001	0.00
4	0.33	0.10	0.006	0.267	0.002	0.00
5	0.42	0.10	0.006	0.266	0.002	0.00
6	0.50	0.10	0.006	0.265	0.002	0.00
7	0.58	0.10	0.006	0.264	0.002	0.00
8	0.67	0.10	0.006	0.263	0.002	0.00
9	0.75	0.10	0.006	0.262	0.002	0.00
10	0.83	0.13	0.008	0.261	0.002	0.01
11	0.92	0.13	0.008	0.259	0.002	0.01
12	1.00	0.13	0.008	0.258	0.002	0.01
13	1.08	0.10	0.006	0.257	0.002	0.00
14	1.17	0.10	0.006	0.256	0.002	0.00
15	1.25	0.10	0.006	0.255	0.002	0.00
16	1.33	0.10	0.006	0.254	0.002	0.00
17	1.42	0.10	0.006	0.253	0.002	0.00
18	1.50	0.10	0.006	0.252	0.002	0.00
19	1.58	0.10	0.006	0.251	0.002	0.00
20	1.67	0.10	0.006	0.250	0.002	0.00

21	1.75	0.10	0.006	0.249	0.002	0.00
22	1.83	0.13	0.008	0.248	0.002	0.01
23	1.92	0.13	0.008	0.247	0.002	0.01
24	2.00	0.13	0.008	0.246	0.002	0.01
25	2.08	0.13	0.008	0.245	0.002	0.01
26	2.17	0.13	0.008	0.244	0.002	0.01
27	2.25	0.13	0.008	0.243	0.002	0.01
28	2.33	0.13	0.008	0.242	0.002	0.01
29	2.42	0.13	0.008	0.241	0.002	0.01
30	2.50	0.13	0.008	0.240	0.002	0.01
31	2.58	0.17	0.010	0.239	0.003	0.01
32	2.67	0.17	0.010	0.238	0.003	0.01
33	2.75	0.17	0.010	0.237	0.003	0.01
34	2.83	0.17	0.010	0.236	0.003	0.01
35	2.92	0.17	0.010	0.236	0.003	0.01
36	3.00	0.17	0.010	0.235	0.003	0.01
37	3.08	0.17	0.010	0.234	0.003	0.01
38	3.17	0.17	0.010	0.233	0.003	0.01
39	3.25	0.17	0.010	0.232	0.003	0.01
40	3.33	0.17	0.010	0.231	0.003	0.01
41	3.42	0.17	0.010	0.230	0.003	0.01
42	3.50	0.17	0.010	0.229	0.003	0.01
43	3.58	0.17	0.010	0.228	0.003	0.01
44	3.67	0.17	0.010	0.227	0.003	0.01
45	3.75	0.17	0.010	0.226	0.003	0.01
46	3.83	0.20	0.012	0.225	0.003	0.01
47	3.92	0.20	0.012	0.224	0.003	0.01
48	4.00	0.20	0.012	0.223	0.003	0.01
49	4.08	0.20	0.012	0.222	0.003	0.01
50	4.17	0.20	0.012	0.221	0.003	0.01
51	4.25	0.20	0.012	0.220	0.003	0.01
52	4.33	0.23	0.015	0.219	0.004	0.01
53	4.42	0.23	0.015	0.218	0.004	0.01
54	4.50	0.23	0.015	0.217	0.004	0.01
55	4.58	0.23	0.015	0.216	0.004	0.01
56	4.67	0.23	0.015	0.216	0.004	0.01
57	4.75	0.23	0.015	0.215	0.004	0.01
58	4.83	0.27	0.017	0.214	0.005	0.01
59	4.92	0.27	0.017	0.213	0.005	0.01
60	5.00	0.27	0.017	0.212	0.005	0.01
61	5.08	0.20	0.012	0.211	0.003	0.01
62	5.17	0.20	0.012	0.210	0.003	0.01
63	5.25	0.20	0.012	0.209	0.003	0.01
64	5.33	0.23	0.015	0.208	0.004	0.01
65	5.42	0.23	0.015	0.207	0.004	0.01
66	5.50	0.23	0.015	0.206	0.004	0.01
67	5.58	0.27	0.017	0.205	0.005	0.01
68	5.67	0.27	0.017	0.205	0.005	0.01
69	5.75	0.27	0.017	0.204	0.005	0.01
70	5.83	0.27	0.017	0.203	0.005	0.01
71	5.92	0.27	0.017	0.202	0.005	0.01
72	6.00	0.27	0.017	0.201	0.005	0.01
73	6.08	0.30	0.019	0.200	0.005	0.01
74	6.17	0.30	0.019	0.199	0.005	0.01
75	6.25	0.30	0.019	0.198	0.005	0.01
76	6.33	0.30	0.019	0.197	0.005	0.01
77	6.42	0.30	0.019	0.196	0.005	0.01
78	6.50	0.30	0.019	0.196	0.005	0.01
79	6.58	0.33	0.021	0.195	0.006	0.02
80	6.67	0.33	0.021	0.194	0.006	0.02
81	6.75	0.33	0.021	0.193	0.006	0.02
82	6.83	0.33	0.021	0.192	0.006	0.02
83	6.92	0.33	0.021	0.191	0.006	0.02
84	7.00	0.33	0.021	0.190	0.006	0.02
85	7.08	0.33	0.021	0.190	0.006	0.02
86	7.17	0.33	0.021	0.189	0.006	0.02
87	7.25	0.33	0.021	0.188	0.006	0.02
88	7.33	0.37	0.023	0.187	0.006	0.02
89	7.42	0.37	0.023	0.186	0.006	0.02
90	7.50	0.37	0.023	0.185	0.006	0.02
91	7.58	0.40	0.025	0.184	0.007	0.02

92	7.67	0.40	0.025	0.184	0.007	0.02
93	7.75	0.40	0.025	0.183	0.007	0.02
94	7.83	0.43	0.027	0.182	0.007	0.02
95	7.92	0.43	0.027	0.181	0.007	0.02
96	8.00	0.43	0.027	0.180	0.007	0.02
97	8.08	0.50	0.031	0.179	0.009	0.02
98	8.17	0.50	0.031	0.178	0.009	0.02
99	8.25	0.50	0.031	0.178	0.009	0.02
100	8.33	0.50	0.031	0.177	0.009	0.02
101	8.42	0.50	0.031	0.176	0.009	0.02
102	8.50	0.50	0.031	0.175	0.009	0.02
103	8.58	0.53	0.033	0.174	0.009	0.02
104	8.67	0.53	0.033	0.174	0.009	0.02
105	8.75	0.53	0.033	0.173	0.009	0.02
106	8.83	0.57	0.035	0.172	0.010	0.03
107	8.92	0.57	0.035	0.171	0.010	0.03
108	9.00	0.57	0.035	0.170	0.010	0.03
109	9.08	0.63	0.039	0.169	0.011	0.03
110	9.17	0.63	0.039	0.169	0.011	0.03
111	9.25	0.63	0.039	0.168	0.011	0.03
112	9.33	0.67	0.041	0.167	0.011	0.03
113	9.42	0.67	0.041	0.166	0.011	0.03
114	9.50	0.67	0.041	0.165	0.011	0.03
115	9.58	0.70	0.044	0.165	0.012	0.03
116	9.67	0.70	0.044	0.164	0.012	0.03
117	9.75	0.70	0.044	0.163	0.012	0.03
118	9.83	0.73	0.046	0.162	0.013	0.03
119	9.92	0.73	0.046	0.162	0.013	0.03
120	10.00	0.73	0.046	0.161	0.013	0.03
121	10.08	0.50	0.031	0.160	0.009	0.02
122	10.17	0.50	0.031	0.159	0.009	0.02
123	10.25	0.50	0.031	0.158	0.009	0.02
124	10.33	0.50	0.031	0.158	0.009	0.02
125	10.42	0.50	0.031	0.157	0.009	0.02
126	10.50	0.50	0.031	0.156	0.009	0.02
127	10.58	0.67	0.041	0.155	0.011	0.03
128	10.67	0.67	0.041	0.155	0.011	0.03
129	10.75	0.67	0.041	0.154	0.011	0.03
130	10.83	0.67	0.041	0.153	0.011	0.03
131	10.92	0.67	0.041	0.152	0.011	0.03
132	11.00	0.67	0.041	0.152	0.011	0.03
133	11.08	0.63	0.039	0.151	0.011	0.03
134	11.17	0.63	0.039	0.150	0.011	0.03
135	11.25	0.63	0.039	0.149	0.011	0.03
136	11.33	0.63	0.039	0.149	0.011	0.03
137	11.42	0.63	0.039	0.148	0.011	0.03
138	11.50	0.63	0.039	0.147	0.011	0.03
139	11.58	0.57	0.035	0.146	0.010	0.03
140	11.67	0.57	0.035	0.146	0.010	0.03
141	11.75	0.57	0.035	0.145	0.010	0.03
142	11.83	0.60	0.037	0.144	0.010	0.03
143	11.92	0.60	0.037	0.144	0.010	0.03
144	12.00	0.60	0.037	0.143	0.010	0.03
145	12.08	0.83	0.052	0.142	0.014	0.04
146	12.17	0.83	0.052	0.141	0.014	0.04
147	12.25	0.83	0.052	0.141	0.014	0.04
148	12.33	0.87	0.054	0.140	0.015	0.04
149	12.42	0.87	0.054	0.139	0.015	0.04
150	12.50	0.87	0.054	0.139	0.015	0.04
151	12.58	0.93	0.058	0.138	0.016	0.04
152	12.67	0.93	0.058	0.137	0.016	0.04
153	12.75	0.93	0.058	0.136	0.016	0.04
154	12.83	0.97	0.060	0.136	0.017	0.04
155	12.92	0.97	0.060	0.135	0.017	0.04
156	13.00	0.97	0.060	0.134	0.017	0.04
157	13.08	1.13	0.071	0.134	0.019	0.05
158	13.17	1.13	0.071	0.133	0.019	0.05
159	13.25	1.13	0.071	0.132	0.019	0.05
160	13.33	1.13	0.071	0.132	0.019	0.05
161	13.42	1.13	0.071	0.131	0.019	0.05
162	13.50	1.13	0.071	0.130	0.019	0.05

163	13.58	0.77	0.048	0.130	0.013	0.03
164	13.67	0.77	0.048	0.129	0.013	0.03
165	13.75	0.77	0.048	0.128	0.013	0.03
166	13.83	0.77	0.048	0.128	0.013	0.03
167	13.92	0.77	0.048	0.127	0.013	0.03
168	14.00	0.77	0.048	0.126	0.013	0.03
169	14.08	0.90	0.056	0.126	0.015	0.04
170	14.17	0.90	0.056	0.125	0.015	0.04
171	14.25	0.90	0.056	0.125	0.015	0.04
172	14.33	0.87	0.054	0.124	0.015	0.04
173	14.42	0.87	0.054	0.123	0.015	0.04
174	14.50	0.87	0.054	0.123	0.015	0.04
175	14.58	0.87	0.054	0.122	0.015	0.04
176	14.67	0.87	0.054	0.121	0.015	0.04
177	14.75	0.87	0.054	0.121	0.015	0.04
178	14.83	0.83	0.052	0.120	0.014	0.04
179	14.92	0.83	0.052	0.120	0.014	0.04
180	15.00	0.83	0.052	0.119	0.014	0.04
181	15.08	0.80	0.050	0.118	0.014	0.04
182	15.17	0.80	0.050	0.118	0.014	0.04
183	15.25	0.80	0.050	0.117	0.014	0.04
184	15.33	0.77	0.048	0.116	0.013	0.03
185	15.42	0.77	0.048	0.116	0.013	0.03
186	15.50	0.77	0.048	0.115	0.013	0.03
187	15.58	0.63	0.039	0.115	0.011	0.03
188	15.67	0.63	0.039	0.114	0.011	0.03
189	15.75	0.63	0.039	0.114	0.011	0.03
190	15.83	0.63	0.039	0.113	0.011	0.03
191	15.92	0.63	0.039	0.112	0.011	0.03
192	16.00	0.63	0.039	0.112	0.011	0.03
193	16.08	0.13	0.008	0.111	0.002	0.01
194	16.17	0.13	0.008	0.111	0.002	0.01
195	16.25	0.13	0.008	0.110	0.002	0.01
196	16.33	0.13	0.008	0.110	0.002	0.01
197	16.42	0.13	0.008	0.109	0.002	0.01
198	16.50	0.13	0.008	0.108	0.002	0.01
199	16.58	0.10	0.006	0.108	0.002	0.00
200	16.67	0.10	0.006	0.107	0.002	0.00
201	16.75	0.10	0.006	0.107	0.002	0.00
202	16.83	0.10	0.006	0.106	0.002	0.00
203	16.92	0.10	0.006	0.106	0.002	0.00
204	17.00	0.10	0.006	0.105	0.002	0.00
205	17.08	0.17	0.010	0.105	0.003	0.01
206	17.17	0.17	0.010	0.104	0.003	0.01
207	17.25	0.17	0.010	0.104	0.003	0.01
208	17.33	0.17	0.010	0.103	0.003	0.01
209	17.42	0.17	0.010	0.103	0.003	0.01
210	17.50	0.17	0.010	0.102	0.003	0.01
211	17.58	0.17	0.010	0.102	0.003	0.01
212	17.67	0.17	0.010	0.101	0.003	0.01
213	17.75	0.17	0.010	0.100	0.003	0.01
214	17.83	0.13	0.008	0.100	0.002	0.01
215	17.92	0.13	0.008	0.100	0.002	0.01
216	18.00	0.13	0.008	0.099	0.002	0.01
217	18.08	0.13	0.008	0.099	0.002	0.01
218	18.17	0.13	0.008	0.098	0.002	0.01
219	18.25	0.13	0.008	0.098	0.002	0.01
220	18.33	0.13	0.008	0.097	0.002	0.01
221	18.42	0.13	0.008	0.097	0.002	0.01
222	18.50	0.13	0.008	0.096	0.002	0.01
223	18.58	0.10	0.006	0.096	0.002	0.00
224	18.67	0.10	0.006	0.095	0.002	0.00
225	18.75	0.10	0.006	0.095	0.002	0.00
226	18.83	0.07	0.004	0.094	0.001	0.00
227	18.92	0.07	0.004	0.094	0.001	0.00
228	19.00	0.07	0.004	0.093	0.001	0.00
229	19.08	0.10	0.006	0.093	0.002	0.00
230	19.17	0.10	0.006	0.093	0.002	0.00
231	19.25	0.10	0.006	0.092	0.002	0.00
232	19.33	0.13	0.008	0.092	0.002	0.01
233	19.42	0.13	0.008	0.091	0.002	0.01

234	19.50	0.13	0.008	0.091	0.002	0.01
235	19.58	0.10	0.006	0.090	0.002	0.00
236	19.67	0.10	0.006	0.090	0.002	0.00
237	19.75	0.10	0.006	0.090	0.002	0.00
238	19.83	0.07	0.004	0.089	0.001	0.00
239	19.92	0.07	0.004	0.089	0.001	0.00
240	20.00	0.07	0.004	0.088	0.001	0.00
241	20.08	0.10	0.006	0.088	0.002	0.00
242	20.17	0.10	0.006	0.088	0.002	0.00
243	20.25	0.10	0.006	0.087	0.002	0.00
244	20.33	0.10	0.006	0.087	0.002	0.00
245	20.42	0.10	0.006	0.086	0.002	0.00
246	20.50	0.10	0.006	0.086	0.002	0.00
247	20.58	0.10	0.006	0.086	0.002	0.00
248	20.67	0.10	0.006	0.085	0.002	0.00
249	20.75	0.10	0.006	0.085	0.002	0.00
250	20.83	0.07	0.004	0.085	0.001	0.00
251	20.92	0.07	0.004	0.084	0.001	0.00
252	21.00	0.07	0.004	0.084	0.001	0.00
253	21.08	0.10	0.006	0.084	0.002	0.00
254	21.17	0.10	0.006	0.083	0.002	0.00
255	21.25	0.10	0.006	0.083	0.002	0.00
256	21.33	0.07	0.004	0.083	0.001	0.00
257	21.42	0.07	0.004	0.082	0.001	0.00
258	21.50	0.07	0.004	0.082	0.001	0.00
259	21.58	0.10	0.006	0.082	0.002	0.00
260	21.67	0.10	0.006	0.081	0.002	0.00
261	21.75	0.10	0.006	0.081	0.002	0.00
262	21.83	0.07	0.004	0.081	0.001	0.00
263	21.92	0.07	0.004	0.081	0.001	0.00
264	22.00	0.07	0.004	0.080	0.001	0.00
265	22.08	0.10	0.006	0.080	0.002	0.00
266	22.17	0.10	0.006	0.080	0.002	0.00
267	22.25	0.10	0.006	0.080	0.002	0.00
268	22.33	0.07	0.004	0.079	0.001	0.00
269	22.42	0.07	0.004	0.079	0.001	0.00
270	22.50	0.07	0.004	0.079	0.001	0.00
271	22.58	0.07	0.004	0.079	0.001	0.00
272	22.67	0.07	0.004	0.078	0.001	0.00
273	22.75	0.07	0.004	0.078	0.001	0.00
274	22.83	0.07	0.004	0.078	0.001	0.00
275	22.92	0.07	0.004	0.078	0.001	0.00
276	23.00	0.07	0.004	0.078	0.001	0.00
277	23.08	0.07	0.004	0.077	0.001	0.00
278	23.17	0.07	0.004	0.077	0.001	0.00
279	23.25	0.07	0.004	0.077	0.001	0.00
280	23.33	0.07	0.004	0.077	0.001	0.00
281	23.42	0.07	0.004	0.077	0.001	0.00
282	23.50	0.07	0.004	0.077	0.001	0.00
283	23.58	0.07	0.004	0.077	0.001	0.00
284	23.67	0.07	0.004	0.076	0.001	0.00
285	23.75	0.07	0.004	0.076	0.001	0.00
286	23.83	0.07	0.004	0.076	0.001	0.00
287	23.92	0.07	0.004	0.076	0.001	0.00
288	24.00	0.07	0.004	0.076	0.001	0.00
	Sum =	100.0			Sum =	4.5

Flood volume = Effective rainfall 0.38(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.012(Ac.Ft)
Total rainfall = 0.52(In)
Flood volume = 1376.8 Cubic Feet
Total soil loss = 524.9 Cubic Feet

Storm Event 2 Effective Rainfall = 0.983(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1 0.08	0.07	0.008	0.270	0.002	0.01
2 0.17	0.07	0.008	0.269	0.002	0.01

3	0.25	0.07	0.008	0.268	0.002	0.01
4	0.33	0.10	0.012	0.267	0.003	0.01
5	0.42	0.10	0.012	0.266	0.003	0.01
6	0.50	0.10	0.012	0.265	0.003	0.01
7	0.58	0.10	0.012	0.264	0.003	0.01
8	0.67	0.10	0.012	0.263	0.003	0.01
9	0.75	0.10	0.012	0.262	0.003	0.01
10	0.83	0.13	0.016	0.261	0.004	0.01
11	0.92	0.13	0.016	0.259	0.004	0.01
12	1.00	0.13	0.016	0.258	0.004	0.01
13	1.08	0.10	0.012	0.257	0.003	0.01
14	1.17	0.10	0.012	0.256	0.003	0.01
15	1.25	0.10	0.012	0.255	0.003	0.01
16	1.33	0.10	0.012	0.254	0.003	0.01
17	1.42	0.10	0.012	0.253	0.003	0.01
18	1.50	0.10	0.012	0.252	0.003	0.01
19	1.58	0.10	0.012	0.251	0.003	0.01
20	1.67	0.10	0.012	0.250	0.003	0.01
21	1.75	0.10	0.012	0.249	0.003	0.01
22	1.83	0.13	0.016	0.248	0.004	0.01
23	1.92	0.13	0.016	0.247	0.004	0.01
24	2.00	0.13	0.016	0.246	0.004	0.01
25	2.08	0.13	0.016	0.245	0.004	0.01
26	2.17	0.13	0.016	0.244	0.004	0.01
27	2.25	0.13	0.016	0.243	0.004	0.01
28	2.33	0.13	0.016	0.242	0.004	0.01
29	2.42	0.13	0.016	0.241	0.004	0.01
30	2.50	0.13	0.016	0.240	0.004	0.01
31	2.58	0.17	0.020	0.239	0.005	0.01
32	2.67	0.17	0.020	0.238	0.005	0.01
33	2.75	0.17	0.020	0.237	0.005	0.01
34	2.83	0.17	0.020	0.236	0.005	0.01
35	2.92	0.17	0.020	0.236	0.005	0.01
36	3.00	0.17	0.020	0.235	0.005	0.01
37	3.08	0.17	0.020	0.234	0.005	0.01
38	3.17	0.17	0.020	0.233	0.005	0.01
39	3.25	0.17	0.020	0.232	0.005	0.01
40	3.33	0.17	0.020	0.231	0.005	0.01
41	3.42	0.17	0.020	0.230	0.005	0.01
42	3.50	0.17	0.020	0.229	0.005	0.01
43	3.58	0.17	0.020	0.228	0.005	0.01
44	3.67	0.17	0.020	0.227	0.005	0.01
45	3.75	0.17	0.020	0.226	0.005	0.01
46	3.83	0.20	0.024	0.225	0.007	0.02
47	3.92	0.20	0.024	0.224	0.007	0.02
48	4.00	0.20	0.024	0.223	0.007	0.02
49	4.08	0.20	0.024	0.222	0.007	0.02
50	4.17	0.20	0.024	0.221	0.007	0.02
51	4.25	0.20	0.024	0.220	0.007	0.02
52	4.33	0.23	0.028	0.219	0.008	0.02
53	4.42	0.23	0.028	0.218	0.008	0.02
54	4.50	0.23	0.028	0.217	0.008	0.02
55	4.58	0.23	0.028	0.216	0.008	0.02
56	4.67	0.23	0.028	0.216	0.008	0.02
57	4.75	0.23	0.028	0.215	0.008	0.02
58	4.83	0.27	0.031	0.214	0.009	0.02
59	4.92	0.27	0.031	0.213	0.009	0.02
60	5.00	0.27	0.031	0.212	0.009	0.02
61	5.08	0.20	0.024	0.211	0.007	0.02
62	5.17	0.20	0.024	0.210	0.007	0.02
63	5.25	0.20	0.024	0.209	0.007	0.02
64	5.33	0.23	0.028	0.208	0.008	0.02
65	5.42	0.23	0.028	0.207	0.008	0.02
66	5.50	0.23	0.028	0.206	0.008	0.02
67	5.58	0.27	0.031	0.205	0.009	0.02
68	5.67	0.27	0.031	0.205	0.009	0.02
69	5.75	0.27	0.031	0.204	0.009	0.02
70	5.83	0.27	0.031	0.203	0.009	0.02
71	5.92	0.27	0.031	0.202	0.009	0.02
72	6.00	0.27	0.031	0.201	0.009	0.02
73	6.08	0.30	0.035	0.200	0.010	0.03

74	6.17	0.30	0.035	0.199	0.010	0.03
75	6.25	0.30	0.035	0.198	0.010	0.03
76	6.33	0.30	0.035	0.197	0.010	0.03
77	6.42	0.30	0.035	0.196	0.010	0.03
78	6.50	0.30	0.035	0.196	0.010	0.03
79	6.58	0.33	0.039	0.195	0.011	0.03
80	6.67	0.33	0.039	0.194	0.011	0.03
81	6.75	0.33	0.039	0.193	0.011	0.03
82	6.83	0.33	0.039	0.192	0.011	0.03
83	6.92	0.33	0.039	0.191	0.011	0.03
84	7.00	0.33	0.039	0.190	0.011	0.03
85	7.08	0.33	0.039	0.190	0.011	0.03
86	7.17	0.33	0.039	0.189	0.011	0.03
87	7.25	0.33	0.039	0.188	0.011	0.03
88	7.33	0.37	0.043	0.187	0.012	0.03
89	7.42	0.37	0.043	0.186	0.012	0.03
90	7.50	0.37	0.043	0.185	0.012	0.03
91	7.58	0.40	0.047	0.184	0.013	0.03
92	7.67	0.40	0.047	0.184	0.013	0.03
93	7.75	0.40	0.047	0.183	0.013	0.03
94	7.83	0.43	0.051	0.182	0.014	0.04
95	7.92	0.43	0.051	0.181	0.014	0.04
96	8.00	0.43	0.051	0.180	0.014	0.04
97	8.08	0.50	0.059	0.179	0.016	0.04
98	8.17	0.50	0.059	0.178	0.016	0.04
99	8.25	0.50	0.059	0.178	0.016	0.04
100	8.33	0.50	0.059	0.177	0.016	0.04
101	8.42	0.50	0.059	0.176	0.016	0.04
102	8.50	0.50	0.059	0.175	0.016	0.04
103	8.58	0.53	0.063	0.174	0.017	0.05
104	8.67	0.53	0.063	0.174	0.017	0.05
105	8.75	0.53	0.063	0.173	0.017	0.05
106	8.83	0.57	0.067	0.172	0.018	0.05
107	8.92	0.57	0.067	0.171	0.018	0.05
108	9.00	0.57	0.067	0.170	0.018	0.05
109	9.08	0.63	0.075	0.169	0.021	0.05
110	9.17	0.63	0.075	0.169	0.021	0.05
111	9.25	0.63	0.075	0.168	0.021	0.05
112	9.33	0.67	0.079	0.167	0.022	0.06
113	9.42	0.67	0.079	0.166	0.022	0.06
114	9.50	0.67	0.079	0.165	0.022	0.06
115	9.58	0.70	0.083	0.165	0.023	0.06
116	9.67	0.70	0.083	0.164	0.023	0.06
117	9.75	0.70	0.083	0.163	0.023	0.06
118	9.83	0.73	0.086	0.162	0.024	0.06
119	9.92	0.73	0.086	0.162	0.024	0.06
120	10.00	0.73	0.086	0.161	0.024	0.06
121	10.08	0.50	0.059	0.160	0.016	0.04
122	10.17	0.50	0.059	0.159	0.016	0.04
123	10.25	0.50	0.059	0.158	0.016	0.04
124	10.33	0.50	0.059	0.158	0.016	0.04
125	10.42	0.50	0.059	0.157	0.016	0.04
126	10.50	0.50	0.059	0.156	0.016	0.04
127	10.58	0.67	0.079	0.155	0.022	0.06
128	10.67	0.67	0.079	0.155	0.022	0.06
129	10.75	0.67	0.079	0.154	0.022	0.06
130	10.83	0.67	0.079	0.153	0.022	0.06
131	10.92	0.67	0.079	0.152	0.022	0.06
132	11.00	0.67	0.079	0.152	0.022	0.06
133	11.08	0.63	0.075	0.151	0.021	0.05
134	11.17	0.63	0.075	0.150	0.021	0.05
135	11.25	0.63	0.075	0.149	0.021	0.05
136	11.33	0.63	0.075	0.149	0.021	0.05
137	11.42	0.63	0.075	0.148	0.021	0.05
138	11.50	0.63	0.075	0.147	0.021	0.05
139	11.58	0.57	0.067	0.146	0.018	0.05
140	11.67	0.57	0.067	0.146	0.018	0.05
141	11.75	0.57	0.067	0.145	0.018	0.05
142	11.83	0.60	0.071	0.144	0.020	0.05
143	11.92	0.60	0.071	0.144	0.020	0.05
144	12.00	0.60	0.071	0.143	0.020	0.05

145	12.08	0.83	0.098	0.142	0.027	0.07
146	12.17	0.83	0.098	0.141	0.027	0.07
147	12.25	0.83	0.098	0.141	0.027	0.07
148	12.33	0.87	0.102	0.140	0.028	0.07
149	12.42	0.87	0.102	0.139	0.028	0.07
150	12.50	0.87	0.102	0.139	0.028	0.07
151	12.58	0.93	0.110	0.138	0.030	0.08
152	12.67	0.93	0.110	0.137	0.030	0.08
153	12.75	0.93	0.110	0.136	0.030	0.08
154	12.83	0.97	0.114	0.136	0.031	0.08
155	12.92	0.97	0.114	0.135	0.031	0.08
156	13.00	0.97	0.114	0.134	0.031	0.08
157	13.08	1.13	0.134	0.134	0.037	0.10
158	13.17	1.13	0.134	0.133	---	0.00
159	13.25	1.13	0.134	0.132	---	0.00
160	13.33	1.13	0.134	0.132	---	0.00
161	13.42	1.13	0.134	0.131	---	0.00
162	13.50	1.13	0.134	0.130	---	0.00
163	13.58	0.77	0.090	0.130	0.025	0.07
164	13.67	0.77	0.090	0.129	0.025	0.07
165	13.75	0.77	0.090	0.128	0.025	0.07
166	13.83	0.77	0.090	0.128	0.025	0.07
167	13.92	0.77	0.090	0.127	0.025	0.07
168	14.00	0.77	0.090	0.126	0.025	0.07
169	14.08	0.90	0.106	0.126	0.029	0.08
170	14.17	0.90	0.106	0.125	0.029	0.08
171	14.25	0.90	0.106	0.125	0.029	0.08
172	14.33	0.87	0.102	0.124	0.028	0.07
173	14.42	0.87	0.102	0.123	0.028	0.07
174	14.50	0.87	0.102	0.123	0.028	0.07
175	14.58	0.87	0.102	0.122	0.028	0.07
176	14.67	0.87	0.102	0.121	0.028	0.07
177	14.75	0.87	0.102	0.121	0.028	0.07
178	14.83	0.83	0.098	0.120	0.027	0.07
179	14.92	0.83	0.098	0.120	0.027	0.07
180	15.00	0.83	0.098	0.119	0.027	0.07
181	15.08	0.80	0.094	0.118	0.026	0.07
182	15.17	0.80	0.094	0.118	0.026	0.07
183	15.25	0.80	0.094	0.117	0.026	0.07
184	15.33	0.77	0.090	0.116	0.025	0.07
185	15.42	0.77	0.090	0.116	0.025	0.07
186	15.50	0.77	0.090	0.115	0.025	0.07
187	15.58	0.63	0.075	0.115	0.021	0.05
188	15.67	0.63	0.075	0.114	0.021	0.05
189	15.75	0.63	0.075	0.114	0.021	0.05
190	15.83	0.63	0.075	0.113	0.021	0.05
191	15.92	0.63	0.075	0.112	0.021	0.05
192	16.00	0.63	0.075	0.112	0.021	0.05
193	16.08	0.13	0.016	0.111	0.004	0.01
194	16.17	0.13	0.016	0.111	0.004	0.01
195	16.25	0.13	0.016	0.110	0.004	0.01
196	16.33	0.13	0.016	0.110	0.004	0.01
197	16.42	0.13	0.016	0.109	0.004	0.01
198	16.50	0.13	0.016	0.108	0.004	0.01
199	16.58	0.10	0.012	0.108	0.003	0.01
200	16.67	0.10	0.012	0.107	0.003	0.01
201	16.75	0.10	0.012	0.107	0.003	0.01
202	16.83	0.10	0.012	0.106	0.003	0.01
203	16.92	0.10	0.012	0.106	0.003	0.01
204	17.00	0.10	0.012	0.105	0.003	0.01
205	17.08	0.17	0.020	0.105	0.005	0.01
206	17.17	0.17	0.020	0.104	0.005	0.01
207	17.25	0.17	0.020	0.104	0.005	0.01
208	17.33	0.17	0.020	0.103	0.005	0.01
209	17.42	0.17	0.020	0.103	0.005	0.01
210	17.50	0.17	0.020	0.102	0.005	0.01
211	17.58	0.17	0.020	0.102	0.005	0.01
212	17.67	0.17	0.020	0.101	0.005	0.01
213	17.75	0.17	0.020	0.100	0.005	0.01
214	17.83	0.13	0.016	0.100	0.004	0.01
215	17.92	0.13	0.016	0.100	0.004	0.01

216	18.00	0.13	0.016	0.099	0.004	0.01
217	18.08	0.13	0.016	0.099	0.004	0.01
218	18.17	0.13	0.016	0.098	0.004	0.01
219	18.25	0.13	0.016	0.098	0.004	0.01
220	18.33	0.13	0.016	0.097	0.004	0.01
221	18.42	0.13	0.016	0.097	0.004	0.01
222	18.50	0.13	0.016	0.096	0.004	0.01
223	18.58	0.10	0.012	0.096	0.003	0.01
224	18.67	0.10	0.012	0.095	0.003	0.01
225	18.75	0.10	0.012	0.095	0.003	0.01
226	18.83	0.07	0.008	0.094	0.002	0.01
227	18.92	0.07	0.008	0.094	0.002	0.01
228	19.00	0.07	0.008	0.093	0.002	0.01
229	19.08	0.10	0.012	0.093	0.003	0.01
230	19.17	0.10	0.012	0.093	0.003	0.01
231	19.25	0.10	0.012	0.092	0.003	0.01
232	19.33	0.13	0.016	0.092	0.004	0.01
233	19.42	0.13	0.016	0.091	0.004	0.01
234	19.50	0.13	0.016	0.091	0.004	0.01
235	19.58	0.10	0.012	0.090	0.003	0.01
236	19.67	0.10	0.012	0.090	0.003	0.01
237	19.75	0.10	0.012	0.090	0.003	0.01
238	19.83	0.07	0.008	0.089	0.002	0.01
239	19.92	0.07	0.008	0.089	0.002	0.01
240	20.00	0.07	0.008	0.088	0.002	0.01
241	20.08	0.10	0.012	0.088	0.003	0.01
242	20.17	0.10	0.012	0.088	0.003	0.01
243	20.25	0.10	0.012	0.087	0.003	0.01
244	20.33	0.10	0.012	0.087	0.003	0.01
245	20.42	0.10	0.012	0.086	0.003	0.01
246	20.50	0.10	0.012	0.086	0.003	0.01
247	20.58	0.10	0.012	0.086	0.003	0.01
248	20.67	0.10	0.012	0.085	0.003	0.01
249	20.75	0.10	0.012	0.085	0.003	0.01
250	20.83	0.07	0.008	0.085	0.002	0.01
251	20.92	0.07	0.008	0.084	0.002	0.01
252	21.00	0.07	0.008	0.084	0.002	0.01
253	21.08	0.10	0.012	0.084	0.003	0.01
254	21.17	0.10	0.012	0.083	0.003	0.01
255	21.25	0.10	0.012	0.083	0.003	0.01
256	21.33	0.07	0.008	0.083	0.002	0.01
257	21.42	0.07	0.008	0.082	0.002	0.01
258	21.50	0.07	0.008	0.082	0.002	0.01
259	21.58	0.10	0.012	0.082	0.003	0.01
260	21.67	0.10	0.012	0.081	0.003	0.01
261	21.75	0.10	0.012	0.081	0.003	0.01
262	21.83	0.07	0.008	0.081	0.002	0.01
263	21.92	0.07	0.008	0.081	0.002	0.01
264	22.00	0.07	0.008	0.080	0.002	0.01
265	22.08	0.10	0.012	0.080	0.003	0.01
266	22.17	0.10	0.012	0.080	0.003	0.01
267	22.25	0.10	0.012	0.080	0.003	0.01
268	22.33	0.07	0.008	0.079	0.002	0.01
269	22.42	0.07	0.008	0.079	0.002	0.01
270	22.50	0.07	0.008	0.079	0.002	0.01
271	22.58	0.07	0.008	0.079	0.002	0.01
272	22.67	0.07	0.008	0.078	0.002	0.01
273	22.75	0.07	0.008	0.078	0.002	0.01
274	22.83	0.07	0.008	0.078	0.002	0.01
275	22.92	0.07	0.008	0.078	0.002	0.01
276	23.00	0.07	0.008	0.078	0.002	0.01
277	23.08	0.07	0.008	0.077	0.002	0.01
278	23.17	0.07	0.008	0.077	0.002	0.01
279	23.25	0.07	0.008	0.077	0.002	0.01
280	23.33	0.07	0.008	0.077	0.002	0.01
281	23.42	0.07	0.008	0.077	0.002	0.01
282	23.50	0.07	0.008	0.077	0.002	0.01
283	23.58	0.07	0.008	0.077	0.002	0.01
284	23.67	0.07	0.008	0.076	0.002	0.01
285	23.75	0.07	0.008	0.076	0.002	0.01
286	23.83	0.07	0.008	0.076	0.002	0.01

287	23.92	0.07	0.008	0.076	0.002	0.01
288	24.00	0.07	0.008	0.076	0.002	0.01
	Sum =	100.0			Sum =	8.1

Flood volume = Effective rainfall 0.67(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.31(In)
Total soil loss = 0.026(Ac.Ft)
Total rainfall = 0.98(In)
Flood volume = 2463.9 Cubic Feet
Total soil loss = 1139.4 Cubic Feet

Storm Event 1 Effective Rainfall = 2.730(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.022	0.270	0.006	0.02
2	0.17	0.07	0.022	0.269	0.006	0.02
3	0.25	0.07	0.022	0.268	0.006	0.02
4	0.33	0.10	0.033	0.267	0.009	0.02
5	0.42	0.10	0.033	0.266	0.009	0.02
6	0.50	0.10	0.033	0.265	0.009	0.02
7	0.58	0.10	0.033	0.264	0.009	0.02
8	0.67	0.10	0.033	0.263	0.009	0.02
9	0.75	0.10	0.033	0.262	0.009	0.02
10	0.83	0.13	0.044	0.261	0.012	0.03
11	0.92	0.13	0.044	0.259	0.012	0.03
12	1.00	0.13	0.044	0.258	0.012	0.03
13	1.08	0.10	0.033	0.257	0.009	0.02
14	1.17	0.10	0.033	0.256	0.009	0.02
15	1.25	0.10	0.033	0.255	0.009	0.02
16	1.33	0.10	0.033	0.254	0.009	0.02
17	1.42	0.10	0.033	0.253	0.009	0.02
18	1.50	0.10	0.033	0.252	0.009	0.02
19	1.58	0.10	0.033	0.251	0.009	0.02
20	1.67	0.10	0.033	0.250	0.009	0.02
21	1.75	0.10	0.033	0.249	0.009	0.02
22	1.83	0.13	0.044	0.248	0.012	0.03
23	1.92	0.13	0.044	0.247	0.012	0.03
24	2.00	0.13	0.044	0.246	0.012	0.03
25	2.08	0.13	0.044	0.245	0.012	0.03
26	2.17	0.13	0.044	0.244	0.012	0.03
27	2.25	0.13	0.044	0.243	0.012	0.03
28	2.33	0.13	0.044	0.242	0.012	0.03
29	2.42	0.13	0.044	0.241	0.012	0.03
30	2.50	0.13	0.044	0.240	0.012	0.03
31	2.58	0.17	0.055	0.239	0.015	0.04
32	2.67	0.17	0.055	0.238	0.015	0.04
33	2.75	0.17	0.055	0.237	0.015	0.04
34	2.83	0.17	0.055	0.236	0.015	0.04
35	2.92	0.17	0.055	0.236	0.015	0.04
36	3.00	0.17	0.055	0.235	0.015	0.04
37	3.08	0.17	0.055	0.234	0.015	0.04
38	3.17	0.17	0.055	0.233	0.015	0.04
39	3.25	0.17	0.055	0.232	0.015	0.04
40	3.33	0.17	0.055	0.231	0.015	0.04
41	3.42	0.17	0.055	0.230	0.015	0.04
42	3.50	0.17	0.055	0.229	0.015	0.04
43	3.58	0.17	0.055	0.228	0.015	0.04
44	3.67	0.17	0.055	0.227	0.015	0.04
45	3.75	0.17	0.055	0.226	0.015	0.04
46	3.83	0.20	0.066	0.225	0.018	0.05
47	3.92	0.20	0.066	0.224	0.018	0.05
48	4.00	0.20	0.066	0.223	0.018	0.05
49	4.08	0.20	0.066	0.222	0.018	0.05
50	4.17	0.20	0.066	0.221	0.018	0.05
51	4.25	0.20	0.066	0.220	0.018	0.05
52	4.33	0.23	0.076	0.219	0.021	0.06
53	4.42	0.23	0.076	0.218	0.021	0.06
54	4.50	0.23	0.076	0.217	0.021	0.06
55	4.58	0.23	0.076	0.216	0.021	0.06

56	4.67	0.23	0.076	0.216	0.021	0.06
57	4.75	0.23	0.076	0.215	0.021	0.06
58	4.83	0.27	0.087	0.214	0.024	0.06
59	4.92	0.27	0.087	0.213	0.024	0.06
60	5.00	0.27	0.087	0.212	0.024	0.06
61	5.08	0.20	0.066	0.211	0.018	0.05
62	5.17	0.20	0.066	0.210	0.018	0.05
63	5.25	0.20	0.066	0.209	0.018	0.05
64	5.33	0.23	0.076	0.208	0.021	0.06
65	5.42	0.23	0.076	0.207	0.021	0.06
66	5.50	0.23	0.076	0.206	0.021	0.06
67	5.58	0.27	0.087	0.205	0.024	0.06
68	5.67	0.27	0.087	0.205	0.024	0.06
69	5.75	0.27	0.087	0.204	0.024	0.06
70	5.83	0.27	0.087	0.203	0.024	0.06
71	5.92	0.27	0.087	0.202	0.024	0.06
72	6.00	0.27	0.087	0.201	0.024	0.06
73	6.08	0.30	0.098	0.200	0.027	0.07
74	6.17	0.30	0.098	0.199	0.027	0.07
75	6.25	0.30	0.098	0.198	0.027	0.07
76	6.33	0.30	0.098	0.197	0.027	0.07
77	6.42	0.30	0.098	0.196	0.027	0.07
78	6.50	0.30	0.098	0.196	0.027	0.07
79	6.58	0.33	0.109	0.195	0.030	0.08
80	6.67	0.33	0.109	0.194	0.030	0.08
81	6.75	0.33	0.109	0.193	0.030	0.08
82	6.83	0.33	0.109	0.192	0.030	0.08
83	6.92	0.33	0.109	0.191	0.030	0.08
84	7.00	0.33	0.109	0.190	0.030	0.08
85	7.08	0.33	0.109	0.190	0.030	0.08
86	7.17	0.33	0.109	0.189	0.030	0.08
87	7.25	0.33	0.109	0.188	0.030	0.08
88	7.33	0.37	0.120	0.187	0.033	0.09
89	7.42	0.37	0.120	0.186	0.033	0.09
90	7.50	0.37	0.120	0.185	0.033	0.09
91	7.58	0.40	0.131	0.184	0.036	0.09
92	7.67	0.40	0.131	0.184	0.036	0.09
93	7.75	0.40	0.131	0.183	0.036	0.09
94	7.83	0.43	0.142	0.182	0.039	0.10
95	7.92	0.43	0.142	0.181	0.039	0.10
96	8.00	0.43	0.142	0.180	0.039	0.10
97	8.08	0.50	0.164	0.179	0.045	0.12
98	8.17	0.50	0.164	0.178	0.045	0.12
99	8.25	0.50	0.164	0.178	0.045	0.12
100	8.33	0.50	0.164	0.177	0.045	0.12
101	8.42	0.50	0.164	0.176	0.045	0.12
102	8.50	0.50	0.164	0.175	0.045	0.12
103	8.58	0.53	0.175	0.174	---	0.00
104	8.67	0.53	0.175	0.174	---	0.00
105	8.75	0.53	0.175	0.173	---	0.00
106	8.83	0.57	0.186	0.172	---	0.01
107	8.92	0.57	0.186	0.171	---	0.01
108	9.00	0.57	0.186	0.170	---	0.02
109	9.08	0.63	0.207	0.169	---	0.04
110	9.17	0.63	0.207	0.169	---	0.04
111	9.25	0.63	0.207	0.168	---	0.04
112	9.33	0.67	0.218	0.167	---	0.05
113	9.42	0.67	0.218	0.166	---	0.05
114	9.50	0.67	0.218	0.165	---	0.05
115	9.58	0.70	0.229	0.165	---	0.06
116	9.67	0.70	0.229	0.164	---	0.07
117	9.75	0.70	0.229	0.163	---	0.07
118	9.83	0.73	0.240	0.162	---	0.08
119	9.92	0.73	0.240	0.162	---	0.08
120	10.00	0.73	0.240	0.161	---	0.08
121	10.08	0.50	0.164	0.160	---	0.00
122	10.17	0.50	0.164	0.159	---	0.00
123	10.25	0.50	0.164	0.158	---	0.01
124	10.33	0.50	0.164	0.158	---	0.01
125	10.42	0.50	0.164	0.157	---	0.01
126	10.50	0.50	0.164	0.156	---	0.01

127	10.58	0.67	0.218	0.155	---	0.06
128	10.67	0.67	0.218	0.155	---	0.06
129	10.75	0.67	0.218	0.154	---	0.06
130	10.83	0.67	0.218	0.153	---	0.07
131	10.92	0.67	0.218	0.152	---	0.07
132	11.00	0.67	0.218	0.152	---	0.07
133	11.08	0.63	0.207	0.151	---	0.06
134	11.17	0.63	0.207	0.150	---	0.06
135	11.25	0.63	0.207	0.149	---	0.06
136	11.33	0.63	0.207	0.149	---	0.06
137	11.42	0.63	0.207	0.148	---	0.06
138	11.50	0.63	0.207	0.147	---	0.06
139	11.58	0.57	0.186	0.146	---	0.04
140	11.67	0.57	0.186	0.146	---	0.04
141	11.75	0.57	0.186	0.145	---	0.04
142	11.83	0.60	0.197	0.144	---	0.05
143	11.92	0.60	0.197	0.144	---	0.05
144	12.00	0.60	0.197	0.143	---	0.05
145	12.08	0.83	0.273	0.142	---	0.13
146	12.17	0.83	0.273	0.141	---	0.13
147	12.25	0.83	0.273	0.141	---	0.13
148	12.33	0.87	0.284	0.140	---	0.14
149	12.42	0.87	0.284	0.139	---	0.14
150	12.50	0.87	0.284	0.139	---	0.15
151	12.58	0.93	0.306	0.138	---	0.17
152	12.67	0.93	0.306	0.137	---	0.17
153	12.75	0.93	0.306	0.136	---	0.17
154	12.83	0.97	0.317	0.136	---	0.18
155	12.92	0.97	0.317	0.135	---	0.18
156	13.00	0.97	0.317	0.134	---	0.18
157	13.08	1.13	0.371	0.134	---	0.24
158	13.17	1.13	0.371	0.133	---	0.24
159	13.25	1.13	0.371	0.132	---	0.24
160	13.33	1.13	0.371	0.132	---	0.24
161	13.42	1.13	0.371	0.131	---	0.24
162	13.50	1.13	0.371	0.130	---	0.24
163	13.58	0.77	0.251	0.130	---	0.12
164	13.67	0.77	0.251	0.129	---	0.12
165	13.75	0.77	0.251	0.128	---	0.12
166	13.83	0.77	0.251	0.128	---	0.12
167	13.92	0.77	0.251	0.127	---	0.12
168	14.00	0.77	0.251	0.126	---	0.12
169	14.08	0.90	0.295	0.126	---	0.17
170	14.17	0.90	0.295	0.125	---	0.17
171	14.25	0.90	0.295	0.125	---	0.17
172	14.33	0.87	0.284	0.124	---	0.16
173	14.42	0.87	0.284	0.123	---	0.16
174	14.50	0.87	0.284	0.123	---	0.16
175	14.58	0.87	0.284	0.122	---	0.16
176	14.67	0.87	0.284	0.121	---	0.16
177	14.75	0.87	0.284	0.121	---	0.16
178	14.83	0.83	0.273	0.120	---	0.15
179	14.92	0.83	0.273	0.120	---	0.15
180	15.00	0.83	0.273	0.119	---	0.15
181	15.08	0.80	0.262	0.118	---	0.14
182	15.17	0.80	0.262	0.118	---	0.14
183	15.25	0.80	0.262	0.117	---	0.15
184	15.33	0.77	0.251	0.116	---	0.13
185	15.42	0.77	0.251	0.116	---	0.14
186	15.50	0.77	0.251	0.115	---	0.14
187	15.58	0.63	0.207	0.115	---	0.09
188	15.67	0.63	0.207	0.114	---	0.09
189	15.75	0.63	0.207	0.114	---	0.09
190	15.83	0.63	0.207	0.113	---	0.09
191	15.92	0.63	0.207	0.112	---	0.10
192	16.00	0.63	0.207	0.112	---	0.10
193	16.08	0.13	0.044	0.111	0.012	0.03
194	16.17	0.13	0.044	0.111	0.012	0.03
195	16.25	0.13	0.044	0.110	0.012	0.03
196	16.33	0.13	0.044	0.110	0.012	0.03
197	16.42	0.13	0.044	0.109	0.012	0.03

198	16.50	0.13	0.044	0.108	0.012	0.03
199	16.58	0.10	0.033	0.108	0.009	0.02
200	16.67	0.10	0.033	0.107	0.009	0.02
201	16.75	0.10	0.033	0.107	0.009	0.02
202	16.83	0.10	0.033	0.106	0.009	0.02
203	16.92	0.10	0.033	0.106	0.009	0.02
204	17.00	0.10	0.033	0.105	0.009	0.02
205	17.08	0.17	0.055	0.105	0.015	0.04
206	17.17	0.17	0.055	0.104	0.015	0.04
207	17.25	0.17	0.055	0.104	0.015	0.04
208	17.33	0.17	0.055	0.103	0.015	0.04
209	17.42	0.17	0.055	0.103	0.015	0.04
210	17.50	0.17	0.055	0.102	0.015	0.04
211	17.58	0.17	0.055	0.102	0.015	0.04
212	17.67	0.17	0.055	0.101	0.015	0.04
213	17.75	0.17	0.055	0.100	0.015	0.04
214	17.83	0.13	0.044	0.100	0.012	0.03
215	17.92	0.13	0.044	0.100	0.012	0.03
216	18.00	0.13	0.044	0.099	0.012	0.03
217	18.08	0.13	0.044	0.099	0.012	0.03
218	18.17	0.13	0.044	0.098	0.012	0.03
219	18.25	0.13	0.044	0.098	0.012	0.03
220	18.33	0.13	0.044	0.097	0.012	0.03
221	18.42	0.13	0.044	0.097	0.012	0.03
222	18.50	0.13	0.044	0.096	0.012	0.03
223	18.58	0.10	0.033	0.096	0.009	0.02
224	18.67	0.10	0.033	0.095	0.009	0.02
225	18.75	0.10	0.033	0.095	0.009	0.02
226	18.83	0.07	0.022	0.094	0.006	0.02
227	18.92	0.07	0.022	0.094	0.006	0.02
228	19.00	0.07	0.022	0.093	0.006	0.02
229	19.08	0.10	0.033	0.093	0.009	0.02
230	19.17	0.10	0.033	0.093	0.009	0.02
231	19.25	0.10	0.033	0.092	0.009	0.02
232	19.33	0.13	0.044	0.092	0.012	0.03
233	19.42	0.13	0.044	0.091	0.012	0.03
234	19.50	0.13	0.044	0.091	0.012	0.03
235	19.58	0.10	0.033	0.090	0.009	0.02
236	19.67	0.10	0.033	0.090	0.009	0.02
237	19.75	0.10	0.033	0.090	0.009	0.02
238	19.83	0.07	0.022	0.089	0.006	0.02
239	19.92	0.07	0.022	0.089	0.006	0.02
240	20.00	0.07	0.022	0.088	0.006	0.02
241	20.08	0.10	0.033	0.088	0.009	0.02
242	20.17	0.10	0.033	0.088	0.009	0.02
243	20.25	0.10	0.033	0.087	0.009	0.02
244	20.33	0.10	0.033	0.087	0.009	0.02
245	20.42	0.10	0.033	0.086	0.009	0.02
246	20.50	0.10	0.033	0.086	0.009	0.02
247	20.58	0.10	0.033	0.086	0.009	0.02
248	20.67	0.10	0.033	0.085	0.009	0.02
249	20.75	0.10	0.033	0.085	0.009	0.02
250	20.83	0.07	0.022	0.085	0.006	0.02
251	20.92	0.07	0.022	0.084	0.006	0.02
252	21.00	0.07	0.022	0.084	0.006	0.02
253	21.08	0.10	0.033	0.084	0.009	0.02
254	21.17	0.10	0.033	0.083	0.009	0.02
255	21.25	0.10	0.033	0.083	0.009	0.02
256	21.33	0.07	0.022	0.083	0.006	0.02
257	21.42	0.07	0.022	0.082	0.006	0.02
258	21.50	0.07	0.022	0.082	0.006	0.02
259	21.58	0.10	0.033	0.082	0.009	0.02
260	21.67	0.10	0.033	0.081	0.009	0.02
261	21.75	0.10	0.033	0.081	0.009	0.02
262	21.83	0.07	0.022	0.081	0.006	0.02
263	21.92	0.07	0.022	0.081	0.006	0.02
264	22.00	0.07	0.022	0.080	0.006	0.02
265	22.08	0.10	0.033	0.080	0.009	0.02
266	22.17	0.10	0.033	0.080	0.009	0.02
267	22.25	0.10	0.033	0.080	0.009	0.02
268	22.33	0.07	0.022	0.079	0.006	0.02

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269  22.42     0.07      0.022         0.079     0.006         0.02
270  22.50     0.07      0.022         0.079     0.006         0.02
271  22.58     0.07      0.022         0.079     0.006         0.02
272  22.67     0.07      0.022         0.078     0.006         0.02
273  22.75     0.07      0.022         0.078     0.006         0.02
274  22.83     0.07      0.022         0.078     0.006         0.02
275  22.92     0.07      0.022         0.078     0.006         0.02
276  23.00     0.07      0.022         0.078     0.006         0.02
277  23.08     0.07      0.022         0.077     0.006         0.02
278  23.17     0.07      0.022         0.077     0.006         0.02
279  23.25     0.07      0.022         0.077     0.006         0.02
280  23.33     0.07      0.022         0.077     0.006         0.02
281  23.42     0.07      0.022         0.077     0.006         0.02
282  23.50     0.07      0.022         0.077     0.006         0.02
283  23.58     0.07      0.022         0.077     0.006         0.02
284  23.67     0.07      0.022         0.076     0.006         0.02
285  23.75     0.07      0.022         0.076     0.006         0.02
286  23.83     0.07      0.022         0.076     0.006         0.02
287  23.92     0.07      0.022         0.076     0.006         0.02
288  24.00     0.07      0.022         0.076     0.006         0.02
    Sum =     100.0                                   Sum =    17.1
      Flood volume = Effective rainfall      1.42(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      1.31(In)
      Total soil loss =     0.110(Ac.Ft)
      Total rainfall =      2.73(In)
      Flood volume =        5210.6 Cubic Feet
      Total soil loss =        4798.4 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.245(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       24 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0000      0.00  Q         |         |         |         |
   0+15       0.0000      0.00  Q         |         |         |         |
   0+20       0.0001      0.00  Q         |         |         |         |
   0+25       0.0001      0.00  Q         |         |         |         |
   0+30       0.0001      0.00  Q         |         |         |         |
   0+35       0.0001      0.00  Q         |         |         |         |
   0+40       0.0002      0.00  Q         |         |         |         |
   0+45       0.0002      0.00  Q         |         |         |         |
   0+50       0.0002      0.00  Q         |         |         |         |
   0+55       0.0003      0.00  Q         |         |         |         |
   1+ 0       0.0003      0.00  Q         |         |         |         |
   1+ 5       0.0003      0.00  Q         |         |         |         |
   1+10       0.0003      0.00  Q         |         |         |         |
   1+15       0.0004      0.00  Q         |         |         |         |
   1+20       0.0004      0.00  Q         |         |         |         |
   1+25       0.0004      0.00  Q         |         |         |         |
   1+30       0.0004      0.00  Q         |         |         |         |
   1+35       0.0005      0.00  Q         |         |         |         |
   1+40       0.0005      0.00  Q         |         |         |         |
   1+45       0.0005      0.00  Q         |         |         |         |
   1+50       0.0005      0.00  Q         |         |         |         |
   1+55       0.0006      0.00  Q         |         |         |         |
   2+ 0       0.0006      0.00  Q         |         |         |         |
   2+ 5       0.0006      0.00  Q         |         |         |         |
   2+10       0.0007      0.00  Q         |         |         |         |
   2+15       0.0007      0.00  Q         |         |         |         |
   2+20       0.0007      0.00  Q         |         |         |         |
   2+25       0.0008      0.00  Q         |         |         |         |
   2+30       0.0008      0.00  Q         |         |         |         |
   2+35       0.0008      0.01  Q         |         |         |         |
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2+40	0.0009	0.01	Q	|	|	|	|
2+45	0.0009	0.01	Q	|	|	|	|
2+50	0.0010	0.01	Q	|	|	|	|
2+55	0.0010	0.01	Q	|	|	|	|
3+ 0	0.0011	0.01	Q	|	|	|	|
3+ 5	0.0011	0.01	Q	|	|	|	|
3+10	0.0011	0.01	Q	|	|	|	|
3+15	0.0012	0.01	Q	|	|	|	|
3+20	0.0012	0.01	Q	|	|	|	|
3+25	0.0013	0.01	Q	|	|	|	|
3+30	0.0013	0.01	Q	|	|	|	|
3+35	0.0013	0.01	Q	|	|	|	|
3+40	0.0014	0.01	Q	|	|	|	|
3+45	0.0014	0.01	Q	|	|	|	|
3+50	0.0015	0.01	Q	|	|	|	|
3+55	0.0015	0.01	Q	|	|	|	|
4+ 0	0.0016	0.01	Q	|	|	|	|
4+ 5	0.0016	0.01	Q	|	|	|	|
4+10	0.0017	0.01	Q	|	|	|	|
4+15	0.0017	0.01	Q	|	|	|	|
4+20	0.0018	0.01	Q	|	|	|	|
4+25	0.0018	0.01	Q	|	|	|	|
4+30	0.0019	0.01	Q	|	|	|	|
4+35	0.0020	0.01	Q	|	|	|	|
4+40	0.0020	0.01	Q	|	|	|	|
4+45	0.0021	0.01	Q	|	|	|	|
4+50	0.0021	0.01	Q	|	|	|	|
4+55	0.0022	0.01	Q	|	|	|	|
5+ 0	0.0023	0.01	Q	|	|	|	|
5+ 5	0.0023	0.01	Q	|	|	|	|
5+10	0.0024	0.01	Q	|	|	|	|
5+15	0.0024	0.01	Q	|	|	|	|
5+20	0.0025	0.01	Q	|	|	|	|
5+25	0.0025	0.01	Q	|	|	|	|
5+30	0.0026	0.01	Q	|	|	|	|
5+35	0.0027	0.01	Q	|	|	|	|
5+40	0.0027	0.01	Q	|	|	|	|
5+45	0.0028	0.01	Q	|	|	|	|
5+50	0.0029	0.01	Q	|	|	|	|
5+55	0.0029	0.01	Q	|	|	|	|
6+ 0	0.0030	0.01	Q	|	|	|	|
6+ 5	0.0031	0.01	Q	|	|	|	|
6+10	0.0031	0.01	Q	|	|	|	|
6+15	0.0032	0.01	Q	|	|	|	|
6+20	0.0033	0.01	Q	|	|	|	|
6+25	0.0034	0.01	Q	|	|	|	|
6+30	0.0034	0.01	Q	|	|	|	|
6+35	0.0035	0.01	Q	|	|	|	|
6+40	0.0036	0.01	Q	|	|	|	|
6+45	0.0037	0.01	Q	|	|	|	|
6+50	0.0038	0.01	Q	|	|	|	|
6+55	0.0038	0.01	Q	|	|	|	|
7+ 0	0.0039	0.01	Q	|	|	|	|
7+ 5	0.0040	0.01	Q	|	|	|	|
7+10	0.0041	0.01	Q	|	|	|	|
7+15	0.0042	0.01	Q	|	|	|	|
7+20	0.0043	0.01	Q	|	|	|	|
7+25	0.0044	0.01	Q	|	|	|	|
7+30	0.0045	0.01	Q	|	|	|	|
7+35	0.0045	0.01	Q	|	|	|	|
7+40	0.0046	0.01	Q	|	|	|	|
7+45	0.0047	0.01	Q	|	|	|	|
7+50	0.0049	0.02	Q	|	|	|	|
7+55	0.0050	0.02	Q	|	|	|	|
8+ 0	0.0051	0.02	Q	|	|	|	|
8+ 5	0.0052	0.02	Q	|	|	|	|
8+10	0.0053	0.02	Q	|	|	|	|
8+15	0.0054	0.02	Q	|	|	|	|
8+20	0.0056	0.02	Q	|	|	|	|
8+25	0.0057	0.02	Q	|	|	|	|
8+30	0.0058	0.02	Q	|	|	|	|

8+35	0.0059	0.02	QV	|	|	|	|
8+40	0.0061	0.02	QV	|	|	|	|
8+45	0.0062	0.02	QV	|	|	|	|
8+50	0.0063	0.02	QV	|	|	|	|
8+55	0.0065	0.02	QV	|	|	|	|
9+ 0	0.0066	0.02	QV	|	|	|	|
9+ 5	0.0068	0.02	QV	|	|	|	|
9+10	0.0069	0.02	QV	|	|	|	|
9+15	0.0071	0.02	QV	|	|	|	|
9+20	0.0073	0.02	QV	|	|	|	|
9+25	0.0074	0.02	QV	|	|	|	|
9+30	0.0076	0.02	QV	|	|	|	|
9+35	0.0078	0.02	QV	|	|	|	|
9+40	0.0079	0.03	QV	|	|	|	|
9+45	0.0081	0.03	QV	|	|	|	|
9+50	0.0083	0.03	QV	|	|	|	|
9+55	0.0085	0.03	QV	|	|	|	|
10+ 0	0.0087	0.03	QV	|	|	|	|
10+ 5	0.0088	0.02	QV	|	|	|	|
10+10	0.0089	0.02	QV	|	|	|	|
10+15	0.0091	0.02	QV	|	|	|	|
10+20	0.0092	0.02	QV	|	|	|	|
10+25	0.0093	0.02	QV	|	|	|	|
10+30	0.0094	0.02	QV	|	|	|	|
10+35	0.0096	0.02	QV	|	|	|	|
10+40	0.0097	0.02	QV	|	|	|	|
10+45	0.0099	0.02	QV	|	|	|	|
10+50	0.0101	0.02	QV	|	|	|	|
10+55	0.0102	0.02	QV	|	|	|	|
11+ 0	0.0104	0.02	QV	|	|	|	|
11+ 5	0.0106	0.02	QV	|	|	|	|
11+10	0.0107	0.02	QV	|	|	|	|
11+15	0.0109	0.02	QV	|	|	|	|
11+20	0.0110	0.02	QV	|	|	|	|
11+25	0.0112	0.02	QV	|	|	|	|
11+30	0.0114	0.02	QV	|	|	|	|
11+35	0.0115	0.02	QV	|	|	|	|
11+40	0.0116	0.02	Q V	|	|	|	|
11+45	0.0118	0.02	Q V	|	|	|	|
11+50	0.0119	0.02	Q V	|	|	|	|
11+55	0.0121	0.02	Q V	|	|	|	|
12+ 0	0.0122	0.02	Q V	|	|	|	|
12+ 5	0.0124	0.03	Q V	|	|	|	|
12+10	0.0126	0.03	Q V	|	|	|	|
12+15	0.0128	0.03	Q V	|	|	|	|
12+20	0.0130	0.03	Q V	|	|	|	|
12+25	0.0133	0.03	Q V	|	|	|	|
12+30	0.0135	0.03	Q V	|	|	|	|
12+35	0.0137	0.03	Q V	|	|	|	|
12+40	0.0139	0.03	Q V	|	|	|	|
12+45	0.0142	0.03	Q V	|	|	|	|
12+50	0.0144	0.03	Q V	|	|	|	|
12+55	0.0146	0.03	Q V	|	|	|	|
13+ 0	0.0149	0.04	Q V	|	|	|	|
13+ 5	0.0152	0.04	Q V	|	|	|	|
13+10	0.0154	0.04	Q V	|	|	|	|
13+15	0.0157	0.04	Q V	|	|	|	|
13+20	0.0160	0.04	Q V	|	|	|	|
13+25	0.0163	0.04	Q V	|	|	|	|
13+30	0.0166	0.04	Q V	|	|	|	|
13+35	0.0168	0.03	Q V	|	|	|	|
13+40	0.0170	0.03	Q V	|	|	|	|
13+45	0.0172	0.03	Q V	|	|	|	|
13+50	0.0174	0.03	Q V	|	|	|	|
13+55	0.0176	0.03	Q V	|	|	|	|
14+ 0	0.0178	0.03	Q V	|	|	|	|
14+ 5	0.0180	0.03	Q V	|	|	|	|
14+10	0.0182	0.03	Q V	|	|	|	|
14+15	0.0184	0.03	Q V	|	|	|	|
14+20	0.0186	0.03	Q V	|	|	|	|
14+25	0.0189	0.03	Q V	|	|	|	|

14+30	0.0191	0.03	Q	V				
14+35	0.0193	0.03	Q	V				
14+40	0.0195	0.03	Q	V				
14+45	0.0197	0.03	Q	V				
14+50	0.0199	0.03	Q	V				
14+55	0.0201	0.03	Q	V				
15+ 0	0.0203	0.03	Q	V				
15+ 5	0.0205	0.03	Q	V				
15+10	0.0207	0.03	Q	V				
15+15	0.0209	0.03	Q	V				
15+20	0.0211	0.03	Q	V				
15+25	0.0213	0.03	Q	V				
15+30	0.0215	0.03	Q	V				
15+35	0.0217	0.02	Q	V				
15+40	0.0219	0.02	Q	V				
15+45	0.0220	0.02	Q	V				
15+50	0.0222	0.02	Q	V				
15+55	0.0223	0.02	Q	V				
16+ 0	0.0225	0.02	Q	V				
16+ 5	0.0226	0.01	Q	V				
16+10	0.0226	0.01	Q	V				
16+15	0.0226	0.00	Q	V				
16+20	0.0227	0.00	Q	V				
16+25	0.0227	0.00	Q	V				
16+30	0.0227	0.00	Q	V				
16+35	0.0228	0.00	Q	V				
16+40	0.0228	0.00	Q	V				
16+45	0.0228	0.00	Q	V				
16+50	0.0228	0.00	Q	V				
16+55	0.0229	0.00	Q	V				
17+ 0	0.0229	0.00	Q	V				
17+ 5	0.0229	0.01	Q	V				
17+10	0.0230	0.01	Q	V				
17+15	0.0230	0.01	Q	V				
17+20	0.0231	0.01	Q	V				
17+25	0.0231	0.01	Q	V				
17+30	0.0231	0.01	Q	V				
17+35	0.0232	0.01	Q	V				
17+40	0.0232	0.01	Q	V				
17+45	0.0233	0.01	Q	V				
17+50	0.0233	0.01	Q	V				
17+55	0.0233	0.00	Q	V				
18+ 0	0.0234	0.00	Q	V				
18+ 5	0.0234	0.00	Q	V				
18+10	0.0234	0.00	Q	V				
18+15	0.0235	0.00	Q	V				
18+20	0.0235	0.00	Q	V				
18+25	0.0235	0.00	Q	V				
18+30	0.0236	0.00	Q	V				
18+35	0.0236	0.00	Q	V				
18+40	0.0236	0.00	Q	V				
18+45	0.0236	0.00	Q	V				
18+50	0.0237	0.00	Q	V				
18+55	0.0237	0.00	Q	V				
19+ 0	0.0237	0.00	Q	V				
19+ 5	0.0237	0.00	Q	V				
19+10	0.0237	0.00	Q	V				
19+15	0.0238	0.00	Q	V				
19+20	0.0238	0.00	Q	V				
19+25	0.0238	0.00	Q	V				
19+30	0.0239	0.00	Q	V				
19+35	0.0239	0.00	Q	V				
19+40	0.0239	0.00	Q	V				
19+45	0.0239	0.00	Q	V				
19+50	0.0240	0.00	Q	V				
19+55	0.0240	0.00	Q	V				
20+ 0	0.0240	0.00	Q	V				
20+ 5	0.0240	0.00	Q	V				
20+10	0.0240	0.00	Q	V				
20+15	0.0241	0.00	Q	V				
20+20	0.0241	0.00	Q	V				

20+25	0.0241	0.00	Q	V	|	|	|	|
20+30	0.0241	0.00	Q	V	|	|	|	|
20+35	0.0242	0.00	Q	V	|	|	|	|
20+40	0.0242	0.00	Q	V	|	|	|	|
20+45	0.0242	0.00	Q	V	|	|	|	|
20+50	0.0242	0.00	Q	V	|	|	|	|
20+55	0.0243	0.00	Q	V	|	|	|	|
21+ 0	0.0243	0.00	Q	V	|	|	|	|
21+ 5	0.0243	0.00	Q	V	|	|	|	|
21+10	0.0243	0.00	Q	V	|	|	|	|
21+15	0.0243	0.00	Q	V	|	|	|	|
21+20	0.0244	0.00	Q	V	|	|	|	|
21+25	0.0244	0.00	Q	V	|	|	|	|
21+30	0.0244	0.00	Q	V	|	|	|	|
21+35	0.0244	0.00	Q	V	|	|	|	|
21+40	0.0244	0.00	Q	V	|	|	|	|
21+45	0.0245	0.00	Q	V	|	|	|	|
21+50	0.0245	0.00	Q	V	|	|	|	|
21+55	0.0245	0.00	Q	V	|	|	|	|
22+ 0	0.0245	0.00	Q	V	|	|	|	|
22+ 5	0.0245	0.00	Q	V	|	|	|	|
22+10	0.0246	0.00	Q	V	|	|	|	|
22+15	0.0246	0.00	Q	V	|	|	|	|
22+20	0.0246	0.00	Q	V	|	|	|	|
22+25	0.0246	0.00	Q	V	|	|	|	|
22+30	0.0246	0.00	Q	V	|	|	|	|
22+35	0.0247	0.00	Q	V	|	|	|	|
22+40	0.0247	0.00	Q	V	|	|	|	|
22+45	0.0247	0.00	Q	V	|	|	|	|
22+50	0.0247	0.00	Q	V	|	|	|	|
22+55	0.0247	0.00	Q	V	|	|	|	|
23+ 0	0.0247	0.00	Q	V	|	|	|	|
23+ 5	0.0248	0.00	Q	V	|	|	|	|
23+10	0.0248	0.00	Q	V	|	|	|	|
23+15	0.0248	0.00	Q	V	|	|	|	|
23+20	0.0248	0.00	Q	V	|	|	|	|
23+25	0.0248	0.00	Q	V	|	|	|	|
23+30	0.0248	0.00	Q	V	|	|	|	|
23+35	0.0249	0.00	Q	V	|	|	|	|
23+40	0.0249	0.00	Q	V	|	|	|	|
23+45	0.0249	0.00	Q	V	|	|	|	|
23+50	0.0249	0.00	Q	V	|	|	|	|
23+55	0.0249	0.00	Q	V	|	|	|	|
24+ 0	0.0249	0.00	Q	V	|	|	|	|
24+ 5	0.0250	0.00	Q	V	|	|	|	|
24+10	0.0250	0.00	Q	V	|	|	|	|
24+15	0.0250	0.00	Q	V	|	|	|	|
24+20	0.0250	0.00	Q	V	|	|	|	|
24+25	0.0251	0.00	Q	V	|	|	|	|
24+30	0.0251	0.00	Q	V	|	|	|	|
24+35	0.0251	0.00	Q	V	|	|	|	|
24+40	0.0252	0.00	Q	V	|	|	|	|
24+45	0.0252	0.00	Q	V	|	|	|	|
24+50	0.0252	0.01	Q	V	|	|	|	|
24+55	0.0253	0.01	Q	V	|	|	|	|
25+ 0	0.0253	0.01	Q	V	|	|	|	|
25+ 5	0.0253	0.01	Q	V	|	|	|	|
25+10	0.0254	0.00	Q	V	|	|	|	|
25+15	0.0254	0.00	Q	V	|	|	|	|
25+20	0.0254	0.00	Q	V	|	|	|	|
25+25	0.0255	0.00	Q	V	|	|	|	|
25+30	0.0255	0.00	Q	V	|	|	|	|
25+35	0.0255	0.00	Q	V	|	|	|	|
25+40	0.0256	0.00	Q	V	|	|	|	|
25+45	0.0256	0.00	Q	V	|	|	|	|
25+50	0.0256	0.01	Q	V	|	|	|	|
25+55	0.0257	0.01	Q	V	|	|	|	|
26+ 0	0.0257	0.01	Q	V	|	|	|	|
26+ 5	0.0258	0.01	Q	V	|	|	|	|
26+10	0.0258	0.01	Q	V	|	|	|	|
26+15	0.0258	0.01	Q	V	|	|	|	|

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26+20       0.0259      0.01  Q   V     |          |          |          |
26+25       0.0259      0.01  Q   V     |          |          |          |
26+30       0.0260      0.01  Q   V     |          |          |          |
26+35       0.0260      0.01  Q   V     |          |          |          |
26+40       0.0261      0.01  Q   V     |          |          |          |
26+45       0.0261      0.01  Q   V     |          |          |          |
26+50       0.0262      0.01  Q   V     |          |          |          |
26+55       0.0262      0.01  Q   V     |          |          |          |
27+ 0       0.0263      0.01  Q   V     |          |          |          |
27+ 5       0.0263      0.01  Q   V     |          |          |          |
27+10       0.0264      0.01  Q   V     |          |          |          |
27+15       0.0264      0.01  Q   V     |          |          |          |
27+20       0.0265      0.01  Q   V     |          |          |          |
27+25       0.0265      0.01  Q   V     |          |          |          |
27+30       0.0266      0.01  Q   V     |          |          |          |
27+35       0.0267      0.01  Q   V     |          |          |          |
27+40       0.0267      0.01  Q   V     |          |          |          |
27+45       0.0268      0.01  Q   V     |          |          |          |
27+50       0.0268      0.01  Q   V     |          |          |          |
27+55       0.0269      0.01  Q   V     |          |          |          |
28+ 0       0.0269      0.01  Q   V     |          |          |          |
28+ 5       0.0270      0.01  Q   V     |          |          |          |
28+10       0.0271      0.01  Q   V     |          |          |          |
28+15       0.0271      0.01  Q   V     |          |          |          |
28+20       0.0272      0.01  Q   V     |          |          |          |
28+25       0.0273      0.01  Q   V     |          |          |          |
28+30       0.0273      0.01  Q   V     |          |          |          |
28+35       0.0274      0.01  Q   V     |          |          |          |
28+40       0.0275      0.01  Q   V     |          |          |          |
28+45       0.0276      0.01  Q   V     |          |          |          |
28+50       0.0276      0.01  Q   V     |          |          |          |
28+55       0.0277      0.01  Q   V     |          |          |          |
29+ 0       0.0278      0.01  Q   V     |          |          |          |
29+ 5       0.0279      0.01  Q   V     |          |          |          |
29+10       0.0280      0.01  Q   V     |          |          |          |
29+15       0.0280      0.01  Q   V     |          |          |          |
29+20       0.0281      0.01  Q   V     |          |          |          |
29+25       0.0282      0.01  Q   V     |          |          |          |
29+30       0.0282      0.01  Q   V     |          |          |          |
29+35       0.0283      0.01  Q   V     |          |          |          |
29+40       0.0284      0.01  Q   V     |          |          |          |
29+45       0.0285      0.01  Q   V     |          |          |          |
29+50       0.0286      0.01  Q   V     |          |          |          |
29+55       0.0286      0.01  Q   V     |          |          |          |
30+ 0       0.0287      0.01  Q   V     |          |          |          |
30+ 5       0.0288      0.01  Q   V     |          |          |          |
30+10       0.0289      0.01  Q   V     |          |          |          |
30+15       0.0290      0.01  Q   V     |          |          |          |
30+20       0.0291      0.01  Q    V    |          |          |          |
30+25       0.0292      0.01  Q    V    |          |          |          |
30+30       0.0293      0.01  Q    V    |          |          |          |
30+35       0.0294      0.01  Q    V    |          |          |          |
30+40       0.0295      0.02  Q    V    |          |          |          |
30+45       0.0296      0.02  Q    V    |          |          |          |
30+50       0.0297      0.02  Q    V    |          |          |          |
30+55       0.0298      0.02  Q    V    |          |          |          |
31+ 0       0.0299      0.02  Q    V    |          |          |          |
31+ 5       0.0300      0.02  Q    V    |          |          |          |
31+10       0.0301      0.02  Q    V    |          |          |          |
31+15       0.0302      0.02  Q    V    |          |          |          |
31+20       0.0304      0.02  Q    V    |          |          |          |
31+25       0.0305      0.02  Q    V    |          |          |          |
31+30       0.0306      0.02  Q    V    |          |          |          |
31+35       0.0307      0.02  Q    V    |          |          |          |
31+40       0.0308      0.02  Q    V    |          |          |          |
31+45       0.0310      0.02  Q    V    |          |          |          |
31+50       0.0311      0.02  Q    V    |          |          |          |
31+55       0.0312      0.02  Q    V    |          |          |          |
32+ 0       0.0314      0.02  Q    V    |          |          |          |
32+ 5       0.0315      0.02  Q    V    |          |          |          |
32+10       0.0317      0.02  Q    V    |          |          |          |
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32+15       0.0318      0.02  Q    V    |          |          |          |
32+20       0.0320      0.02  Q    V    |          |          |          |
32+25       0.0321      0.02  Q    V    |          |          |          |
32+30       0.0323      0.02  Q    V    |          |          |          |
32+35       0.0325      0.02  Q    V    |          |          |          |
32+40       0.0326      0.02  Q    V    |          |          |          |
32+45       0.0328      0.02  Q    V    |          |          |          |
32+50       0.0330      0.03  Q    V    |          |          |          |
32+55       0.0332      0.03  Q    V    |          |          |          |
33+ 0       0.0333      0.03  Q    V    |          |          |          |
33+ 5       0.0335      0.03  Q    V    |          |          |          |
33+10       0.0337      0.03  Q    V    |          |          |          |
33+15       0.0339      0.03  Q    V    |          |          |          |
33+20       0.0341      0.03  Q    V    |          |          |          |
33+25       0.0343      0.03  Q    V    |          |          |          |
33+30       0.0346      0.03  Q    V    |          |          |          |
33+35       0.0348      0.03  Q    V    |          |          |          |
33+40       0.0350      0.03  Q     V   |          |          |          |
33+45       0.0352      0.03  Q     V   |          |          |          |
33+50       0.0354      0.03  Q     V   |          |          |          |
33+55       0.0357      0.03  Q     V   |          |          |          |
34+ 0       0.0359      0.03  Q     V   |          |          |          |
34+ 5       0.0361      0.03  Q     V   |          |          |          |
34+10       0.0363      0.02  Q     V   |          |          |          |
34+15       0.0364      0.02  Q     V   |          |          |          |
34+20       0.0366      0.02  Q     V   |          |          |          |
34+25       0.0367      0.02  Q     V   |          |          |          |
34+30       0.0369      0.02  Q     V   |          |          |          |
34+35       0.0371      0.03  Q     V   |          |          |          |
34+40       0.0373      0.03  Q     V   |          |          |          |
34+45       0.0375      0.03  Q     V   |          |          |          |
34+50       0.0377      0.03  Q     V   |          |          |          |
34+55       0.0379      0.03  Q     V   |          |          |          |
35+ 0       0.0381      0.03  Q     V   |          |          |          |
35+ 5       0.0383      0.03  Q     V   |          |          |          |
35+10       0.0385      0.03  Q     V   |          |          |          |
35+15       0.0387      0.03  Q     V   |          |          |          |
35+20       0.0389      0.03  Q     V   |          |          |          |
35+25       0.0391      0.03  Q     V   |          |          |          |
35+30       0.0393      0.03  Q     V   |          |          |          |
35+35       0.0395      0.03  Q     V   |          |          |          |
35+40       0.0397      0.03  Q     V   |          |          |          |
35+45       0.0399      0.03  Q     V   |          |          |          |
35+50       0.0401      0.03  Q     V   |          |          |          |
35+55       0.0403      0.03  Q     V   |          |          |          |
36+ 0       0.0404      0.03  Q     V   |          |          |          |
36+ 5       0.0407      0.03  Q     V   |          |          |          |
36+10       0.0409      0.04  Q      V  |          |          |          |
36+15       0.0412      0.04  Q      V  |          |          |          |
36+20       0.0415      0.04  Q      V  |          |          |          |
36+25       0.0417      0.04  Q      V  |          |          |          |
36+30       0.0420      0.04  Q      V  |          |          |          |
36+35       0.0423      0.04  Q      V  |          |          |          |
36+40       0.0426      0.04  Q      V  |          |          |          |
36+45       0.0429      0.04  Q      V  |          |          |          |
36+50       0.0432      0.04  Q      V  |          |          |          |
36+55       0.0435      0.04  Q      V  |          |          |          |
37+ 0       0.0438      0.04  Q      V  |          |          |          |
37+ 5       0.0441      0.05  Q      V  |          |          |          |
37+10       0.0445      0.05  Q      V  |          |          |          |
37+15       0.0449      0.05  Q      V  |          |          |          |
37+20       0.0452      0.05  Q      V  |          |          |          |
37+25       0.0456      0.05  Q      V  |          |          |          |
37+30       0.0459      0.05  Q      V  |          |          |          |
37+35       0.0462      0.04  Q      V  |          |          |          |
37+40       0.0465      0.04  Q      V  |          |          |          |
37+45       0.0467      0.04  Q       V |          |          |          |
37+50       0.0470      0.04  Q       V |          |          |          |
37+55       0.0472      0.04  Q       V |          |          |          |
38+ 0       0.0474      0.04  Q       V |          |          |          |
38+ 5       0.0477      0.04  Q       V |          |          |          |
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38+10       0.0480      0.04  Q       V |          |          |          |
38+15       0.0483      0.04  Q       V |          |          |          |
38+20       0.0486      0.04  Q       V |          |          |          |
38+25       0.0488      0.04  Q       V |          |          |          |
38+30       0.0491      0.04  Q       V |          |          |          |
38+35       0.0494      0.04  Q       V |          |          |          |
38+40       0.0496      0.04  Q       V |          |          |          |
38+45       0.0499      0.04  Q       V |          |          |          |
38+50       0.0502      0.04  Q       V |          |          |          |
38+55       0.0505      0.04  Q       V |          |          |          |
39+ 0       0.0507      0.04  Q       V |          |          |          |
39+ 5       0.0510      0.04  Q       V |          |          |          |
39+10       0.0512      0.04  Q       V |          |          |          |
39+15       0.0515      0.04  Q       V |          |          |          |
39+20       0.0517      0.04  Q       V |          |          |          |
39+25       0.0520      0.04  Q       V |          |          |          |
39+30       0.0522      0.04  Q       V |          |          |          |
39+35       0.0524      0.03  Q        V|          |          |          |
39+40       0.0526      0.03  Q        V|          |          |          |
39+45       0.0528      0.03  Q        V|          |          |          |
39+50       0.0530      0.03  Q        V|          |          |          |
39+55       0.0532      0.03  Q        V|          |          |          |
40+ 0       0.0534      0.03  Q        V|          |          |          |
40+ 5       0.0535      0.02  Q        V|          |          |          |
40+10       0.0536      0.01  Q        V|          |          |          |
40+15       0.0536      0.01  Q        V|          |          |          |
40+20       0.0537      0.01  Q        V|          |          |          |
40+25       0.0537      0.01  Q        V|          |          |          |
40+30       0.0538      0.01  Q        V|          |          |          |
40+35       0.0538      0.01  Q        V|          |          |          |
40+40       0.0538      0.00  Q        V|          |          |          |
40+45       0.0539      0.00  Q        V|          |          |          |
40+50       0.0539      0.00  Q        V|          |          |          |
40+55       0.0539      0.00  Q        V|          |          |          |
41+ 0       0.0539      0.00  Q        V|          |          |          |
41+ 5       0.0540      0.01  Q        V|          |          |          |
41+10       0.0540      0.01  Q        V|          |          |          |
41+15       0.0541      0.01  Q        V|          |          |          |
41+20       0.0541      0.01  Q        V|          |          |          |
41+25       0.0542      0.01  Q        V|          |          |          |
41+30       0.0543      0.01  Q        V|          |          |          |
41+35       0.0543      0.01  Q        V|          |          |          |
41+40       0.0544      0.01  Q        V|          |          |          |
41+45       0.0544      0.01  Q        V|          |          |          |
41+50       0.0545      0.01  Q        V|          |          |          |
41+55       0.0545      0.01  Q        V|          |          |          |
42+ 0       0.0545      0.01  Q        V|          |          |          |
42+ 5       0.0546      0.01  Q        V|          |          |          |
42+10       0.0546      0.01  Q        V|          |          |          |
42+15       0.0547      0.01  Q        V|          |          |          |
42+20       0.0547      0.01  Q        V|          |          |          |
42+25       0.0548      0.01  Q        V|          |          |          |
42+30       0.0548      0.01  Q        V|          |          |          |
42+35       0.0548      0.01  Q        V|          |          |          |
42+40       0.0549      0.00  Q        V|          |          |          |
42+45       0.0549      0.00  Q        V|          |          |          |
42+50       0.0549      0.00  Q        V|          |          |          |
42+55       0.0549      0.00  Q        V|          |          |          |
43+ 0       0.0550      0.00  Q        V|          |          |          |
43+ 5       0.0550      0.00  Q        V|          |          |          |
43+10       0.0550      0.00  Q        V|          |          |          |
43+15       0.0551      0.00  Q        V|          |          |          |
43+20       0.0551      0.01  Q        V|          |          |          |
43+25       0.0551      0.01  Q        V|          |          |          |
43+30       0.0552      0.01  Q        V|          |          |          |
43+35       0.0552      0.01  Q        V|          |          |          |
43+40       0.0552      0.00  Q        V|          |          |          |
43+45       0.0553      0.00  Q        V|          |          |          |
43+50       0.0553      0.00  Q        V|          |          |          |
43+55       0.0553      0.00  Q        V|          |          |          |
44+ 0       0.0553      0.00  Q        V|          |          |          |
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44+ 5	0.0554	0.00	Q	V			
44+10	0.0554	0.00	Q	V			
44+15	0.0554	0.00	Q	V			
44+20	0.0555	0.00	Q	V			
44+25	0.0555	0.00	Q	V			
44+30	0.0555	0.00	Q	V			
44+35	0.0556	0.00	Q	V			
44+40	0.0556	0.00	Q	V			
44+45	0.0556	0.00	Q	V			
44+50	0.0556	0.00	Q	V			
44+55	0.0557	0.00	Q	V			
45+ 0	0.0557	0.00	Q	V			
45+ 5	0.0557	0.00	Q	V			
45+10	0.0557	0.00	Q	V			
45+15	0.0558	0.00	Q	V			
45+20	0.0558	0.00	Q	V			
45+25	0.0558	0.00	Q	V			
45+30	0.0558	0.00	Q	V			
45+35	0.0559	0.00	Q	V			
45+40	0.0559	0.00	Q	V			
45+45	0.0559	0.00	Q	V			
45+50	0.0560	0.00	Q	V			
45+55	0.0560	0.00	Q	V			
46+ 0	0.0560	0.00	Q	V			
46+ 5	0.0560	0.00	Q	V			
46+10	0.0561	0.00	Q	V			
46+15	0.0561	0.00	Q	V			
46+20	0.0561	0.00	Q	V			
46+25	0.0561	0.00	Q	V			
46+30	0.0562	0.00	Q	V			
46+35	0.0562	0.00	Q	V			
46+40	0.0562	0.00	Q	V			
46+45	0.0562	0.00	Q	V			
46+50	0.0562	0.00	Q	V			
46+55	0.0563	0.00	Q	V			
47+ 0	0.0563	0.00	Q	V			
47+ 5	0.0563	0.00	Q	V			
47+10	0.0563	0.00	Q	V			
47+15	0.0564	0.00	Q	V			
47+20	0.0564	0.00	Q	V			
47+25	0.0564	0.00	Q	V			
47+30	0.0564	0.00	Q	V			
47+35	0.0564	0.00	Q	V			
47+40	0.0565	0.00	Q	V			
47+45	0.0565	0.00	Q	V			
47+50	0.0565	0.00	Q	V			
47+55	0.0565	0.00	Q	V			
48+ 0	0.0565	0.00	Q	V			
48+ 5	0.0566	0.00	Q	V			
48+10	0.0566	0.01	Q	V			
48+15	0.0566	0.01	Q	V			
48+20	0.0567	0.01	Q	V			
48+25	0.0568	0.01	Q	V			
48+30	0.0568	0.01	Q	V			
48+35	0.0569	0.01	Q	V			
48+40	0.0569	0.01	Q	V			
48+45	0.0570	0.01	Q	V			
48+50	0.0571	0.01	Q	V			
48+55	0.0571	0.01	Q	V			
49+ 0	0.0572	0.01	Q	V			
49+ 5	0.0573	0.01	Q	V			
49+10	0.0574	0.01	Q	V			
49+15	0.0574	0.01	Q	V			
49+20	0.0575	0.01	Q	V			
49+25	0.0575	0.01	Q	V			
49+30	0.0576	0.01	Q	V			
49+35	0.0577	0.01	Q	V			
49+40	0.0577	0.01	Q	V			
49+45	0.0578	0.01	Q	V			
49+50	0.0578	0.01	Q	V			
49+55	0.0579	0.01	Q	V			

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50+ 0       0.0580      0.01  Q        V|         |         |         |
50+ 5       0.0581      0.01  Q        V|         |         |         |
50+10       0.0582      0.01  Q        V|         |         |         |
50+15       0.0582      0.01  Q         V         |         |         |
50+20       0.0583      0.01  Q         V         |         |         |
50+25       0.0584      0.01  Q         V         |         |         |
50+30       0.0585      0.01  Q         V         |         |         |
50+35       0.0586      0.01  Q         V         |         |         |
50+40       0.0587      0.01  Q         V         |         |         |
50+45       0.0588      0.01  Q         V         |         |         |
50+50       0.0589      0.01  Q         V         |         |         |
50+55       0.0590      0.01  Q         V         |         |         |
51+ 0       0.0591      0.01  Q         V         |         |         |
51+ 5       0.0592      0.01  Q         V         |         |         |
51+10       0.0593      0.01  Q         V         |         |         |
51+15       0.0594      0.01  Q         V         |         |         |
51+20       0.0595      0.01  Q         V         |         |         |
51+25       0.0596      0.01  Q         V         |         |         |
51+30       0.0597      0.01  Q         V         |         |         |
51+35       0.0598      0.01  Q         V         |         |         |
51+40       0.0599      0.01  Q         V         |         |         |
51+45       0.0600      0.01  Q         V         |         |         |
51+50       0.0601      0.02  Q         V         |         |         |
51+55       0.0602      0.02  Q         V         |         |         |
52+ 0       0.0603      0.02  Q         V         |         |         |
52+ 5       0.0604      0.02  Q         V         |         |         |
52+10       0.0606      0.02  Q         V         |         |         |
52+15       0.0607      0.02  Q         V         |         |         |
52+20       0.0608      0.02  Q         V         |         |         |
52+25       0.0610      0.02  Q         V         |         |         |
52+30       0.0611      0.02  Q         V         |         |         |
52+35       0.0612      0.02  Q         V         |         |         |
52+40       0.0614      0.02  Q         V         |         |         |
52+45       0.0615      0.02  Q         V         |         |         |
52+50       0.0617      0.02  Q         V         |         |         |
52+55       0.0618      0.02  Q         V         |         |         |
53+ 0       0.0620      0.02  Q         V         |         |         |
53+ 5       0.0621      0.02  Q         V         |         |         |
53+10       0.0622      0.02  Q         V         |         |         |
53+15       0.0624      0.02  Q         V         |         |         |
53+20       0.0625      0.02  Q         V         |         |         |
53+25       0.0626      0.02  Q         V         |         |         |
53+30       0.0628      0.02  Q         V         |         |         |
53+35       0.0629      0.02  Q         V         |         |         |
53+40       0.0631      0.02  Q         V         |         |         |
53+45       0.0632      0.02  Q         V         |         |         |
53+50       0.0634      0.02  Q         V         |         |         |
53+55       0.0636      0.02  Q         V         |         |         |
54+ 0       0.0637      0.02  Q         V         |         |         |
54+ 5       0.0639      0.02  Q         V         |         |         |
54+10       0.0641      0.03  Q         |V        |         |         |
54+15       0.0642      0.03  Q         |V        |         |         |
54+20       0.0644      0.03  Q         |V        |         |         |
54+25       0.0646      0.03  Q         |V        |         |         |
54+30       0.0648      0.03  Q         |V        |         |         |
54+35       0.0650      0.03  Q         |V        |         |         |
54+40       0.0652      0.03  Q         |V        |         |         |
54+45       0.0654      0.03  Q         |V        |         |         |
54+50       0.0656      0.03  Q         |V        |         |         |
54+55       0.0658      0.03  Q         |V        |         |         |
55+ 0       0.0660      0.03  Q         |V        |         |         |
55+ 5       0.0662      0.03  Q         |V        |         |         |
55+10       0.0664      0.03  Q         |V        |         |         |
55+15       0.0666      0.03  Q         |V        |         |         |
55+20       0.0668      0.03  Q         |V        |         |         |
55+25       0.0670      0.03  Q         |V        |         |         |
55+30       0.0672      0.03  Q         |V        |         |         |
55+35       0.0675      0.03  Q         |V        |         |         |
55+40       0.0677      0.03  Q         |V        |         |         |
55+45       0.0679      0.03  Q         |V        |         |         |
55+50       0.0682      0.04  Q         |V        |         |         |
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55+55       0.0684      0.04  Q          |V         |          |          |
56+ 0       0.0687      0.04  Q          |V         |          |          |
56+ 5       0.0690      0.04  Q          |V         |          |          |
56+10       0.0693      0.04  Q          |V         |          |          |
56+15       0.0696      0.04  Q          |V         |          |          |
56+20       0.0699      0.04  Q          | V        |          |          |
56+25       0.0702      0.04  Q          | V        |          |          |
56+30       0.0705      0.04  Q          | V        |          |          |
56+35       0.0708      0.05  Q          | V        |          |          |
56+40       0.0711      0.05  Q          | V        |          |          |
56+45       0.0714      0.05  Q          | V        |          |          |
56+50       0.0718      0.05  Q          | V        |          |          |
56+55       0.0721      0.05  Q          | V        |          |          |
57+ 0       0.0724      0.05  Q          | V        |          |          |
57+ 5       0.0728      0.05  Q          | V        |          |          |
57+10       0.0732      0.05  Q          | V        |          |          |
57+15       0.0736      0.06  Q          | V        |          |          |
57+20       0.0740      0.06  Q          | V        |          |          |
57+25       0.0744      0.06  Q          | V        |          |          |
57+30       0.0748      0.06  Q          | V        |          |          |
57+35       0.0752      0.06  Q          | V        |          |          |
57+40       0.0756      0.06  Q          | V        |          |          |
57+45       0.0760      0.06  Q          |  V       |          |          |
57+50       0.0764      0.06  Q          |  V       |          |          |
57+55       0.0769      0.06  Q          |  V       |          |          |
58+ 0       0.0773      0.06  Q          |  V       |          |          |
58+ 5       0.0777      0.05  Q          |  V       |          |          |
58+10       0.0780      0.04  Q          |  V       |          |          |
58+15       0.0783      0.04  Q          |  V       |          |          |
58+20       0.0786      0.04  Q          |  V       |          |          |
58+25       0.0789      0.04  Q          |  V       |          |          |
58+30       0.0792      0.04  Q          |  V       |          |          |
58+35       0.0795      0.05  Q          |  V       |          |          |
58+40       0.0799      0.06  Q          |  V       |          |          |
58+45       0.0803      0.06  Q          |  V       |          |          |
58+50       0.0807      0.06  Q          |  V       |          |          |
58+55       0.0811      0.06  Q          |  V       |          |          |
59+ 0       0.0815      0.06  Q          |   V      |          |          |
59+ 5       0.0819      0.06  Q          |   V      |          |          |
59+10       0.0823      0.06  Q          |   V      |          |          |
59+15       0.0827      0.06  Q          |   V      |          |          |
59+20       0.0830      0.06  Q          |   V      |          |          |
59+25       0.0834      0.06  Q          |   V      |          |          |
59+30       0.0838      0.06  Q          |   V      |          |          |
59+35       0.0842      0.05  Q          |   V      |          |          |
59+40       0.0845      0.05  Q          |   V      |          |          |
59+45       0.0848      0.05  Q          |   V      |          |          |
59+50       0.0852      0.05  Q          |   V      |          |          |
59+55       0.0855      0.05  Q          |   V      |          |          |
60+ 0       0.0859      0.05  Q          |   V      |          |          |
60+ 5       0.0864      0.06  Q          |   V      |          |          |
60+10       0.0868      0.07  Q          |   V      |          |          |
60+15       0.0873      0.07  Q          |    V     |          |          |
60+20       0.0879      0.07  Q          |    V     |          |          |
60+25       0.0884      0.08  Q          |    V     |          |          |
60+30       0.0889      0.08  Q          |    V     |          |          |
60+35       0.0894      0.08  Q          |    V     |          |          |
60+40       0.0900      0.08  Q          |    V     |          |          |
60+45       0.0906      0.08  Q          |    V     |          |          |
60+50       0.0911      0.08  Q          |    V     |          |          |
60+55       0.0917      0.08  Q          |    V     |          |          |
61+ 0       0.0923      0.08  Q          |    V     |          |          |
61+ 5       0.0929      0.09  Q          |    V     |          |          |
61+10       0.0932      0.04  Q          |     V    |          |          |
61+15       0.0932      0.01  Q          |     V    |          |          |
61+20       0.0932      0.00  Q          |     V    |          |          |
61+25       0.0933      0.00  Q          |     V    |          |          |
61+30       0.0933      0.00  Q          |     V    |          |          |
61+35       0.0936      0.04  Q          |     V    |          |          |
61+40       0.0940      0.06  Q          |     V    |          |          |
61+45       0.0945      0.07  Q          |     V    |          |          |
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61+50       0.0949      0.07  Q          |     V   |          |          |
61+55       0.0954      0.07  Q          |     V   |          |          |
62+ 0       0.0958      0.07  Q          |     V   |          |          |
62+ 5       0.0963      0.07  Q          |     V   |          |          |
62+10       0.0969      0.08  Q          |     V   |          |          |
62+15       0.0974      0.08  Q          |     V   |          |          |
62+20       0.0979      0.08  Q          |     V   |          |          |
62+25       0.0985      0.08  Q          |     V   |          |          |
62+30       0.0990      0.08  Q          |      V  |          |          |
62+35       0.0995      0.08  Q          |      V  |          |          |
62+40       0.1000      0.08  Q          |      V  |          |          |
62+45       0.1005      0.08  Q          |      V  |          |          |
62+50       0.1010      0.07  Q          |      V  |          |          |
62+55       0.1015      0.07  Q          |      V  |          |          |
63+ 0       0.1020      0.07  Q          |      V  |          |          |
63+ 5       0.1025      0.07  Q          |      V  |          |          |
63+10       0.1030      0.07  Q          |      V  |          |          |
63+15       0.1035      0.07  Q          |      V  |          |          |
63+20       0.1040      0.07  Q          |      V  |          |          |
63+25       0.1044      0.07  Q          |      V  |          |          |
63+30       0.1049      0.07  Q          |       V |          |          |
63+35       0.1053      0.06  Q          |       V |          |          |
63+40       0.1057      0.06  Q          |       V |          |          |
63+45       0.1061      0.06  Q          |       V |          |          |
63+50       0.1064      0.06  Q          |       V |          |          |
63+55       0.1068      0.06  Q          |       V |          |          |
64+ 0       0.1072      0.06  Q          |       V |          |          |
64+ 5       0.1074      0.03  Q          |       V |          |          |
64+10       0.1075      0.01  Q          |       V |          |          |
64+15       0.1076      0.01  Q          |       V |          |          |
64+20       0.1076      0.01  Q          |       V |          |          |
64+25       0.1077      0.01  Q          |       V |          |          |
64+30       0.1078      0.01  Q          |       V |          |          |
64+35       0.1079      0.01  Q          |       V |          |          |
64+40       0.1079      0.01  Q          |       V |          |          |
64+45       0.1080      0.01  Q          |       V |          |          |
64+50       0.1081      0.01  Q          |       V |          |          |
64+55       0.1081      0.01  Q          |       V |          |          |
65+ 0       0.1082      0.01  Q          |       V |          |          |
65+ 5       0.1083      0.01  Q          |       V |          |          |
65+10       0.1084      0.01  Q          |       V |          |          |
65+15       0.1085      0.01  Q          |       V |          |          |
65+20       0.1086      0.01  Q          |       V |          |          |
65+25       0.1087      0.01  Q          |       V |          |          |
65+30       0.1088      0.01  Q          |       V |          |          |
65+35       0.1089      0.01  Q          |       V |          |          |
65+40       0.1090      0.01  Q          |       V |          |          |
65+45       0.1091      0.01  Q          |       V |          |          |
65+50       0.1091      0.01  Q          |       V |          |          |
65+55       0.1092      0.01  Q          |       V |          |          |
66+ 0       0.1093      0.01  Q          |       V |          |          |
66+ 5       0.1094      0.01  Q          |       V |          |          |
66+10       0.1095      0.01  Q          |       V |          |          |
66+15       0.1095      0.01  Q          |       V |          |          |
66+20       0.1096      0.01  Q          |       V |          |          |
66+25       0.1097      0.01  Q          |       V |          |          |
66+30       0.1098      0.01  Q          |       V |          |          |
66+35       0.1098      0.01  Q          |       V |          |          |
66+40       0.1099      0.01  Q          |       V |          |          |
66+45       0.1100      0.01  Q          |       V |          |          |
66+50       0.1100      0.01  Q          |       V |          |          |
66+55       0.1101      0.01  Q          |       V |          |          |
67+ 0       0.1101      0.01  Q          |       V |          |          |
67+ 5       0.1101      0.01  Q          |       V |          |          |
67+10       0.1102      0.01  Q          |       V |          |          |
67+15       0.1103      0.01  Q          |       V |          |          |
67+20       0.1103      0.01  Q          |       V |          |          |
67+25       0.1104      0.01  Q          |       V |          |          |
67+30       0.1105      0.01  Q          |       V |          |          |
67+35       0.1106      0.01  Q          |        V|          |          |
67+40       0.1106      0.01  Q          |        V|          |          |
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67+45	0.1107	0.01	Q	|	V|	|	|
67+50	0.1107	0.01	Q	|	V|	|	|
67+55	0.1108	0.01	Q	|	V|	|	|
68+ 0	0.1108	0.01	Q	|	V|	|	|
68+ 5	0.1109	0.01	Q	|	V|	|	|
68+10	0.1109	0.01	Q	|	V|	|	|
68+15	0.1110	0.01	Q	|	V|	|	|
68+20	0.1110	0.01	Q	|	V|	|	|
68+25	0.1111	0.01	Q	|	V|	|	|
68+30	0.1112	0.01	Q	|	V|	|	|
68+35	0.1112	0.01	Q	|	V|	|	|
68+40	0.1113	0.01	Q	|	V|	|	|
68+45	0.1113	0.01	Q	|	V|	|	|
68+50	0.1114	0.01	Q	|	V|	|	|
68+55	0.1114	0.01	Q	|	V|	|	|
69+ 0	0.1115	0.01	Q	|	V|	|	|
69+ 5	0.1115	0.01	Q	|	V|	|	|
69+10	0.1116	0.01	Q	|	V|	|	|
69+15	0.1116	0.01	Q	|	V|	|	|
69+20	0.1117	0.01	Q	|	V|	|	|
69+25	0.1117	0.01	Q	|	V|	|	|
69+30	0.1118	0.01	Q	|	V|	|	|
69+35	0.1118	0.01	Q	|	V|	|	|
69+40	0.1119	0.01	Q	|	V|	|	|
69+45	0.1119	0.01	Q	|	V|	|	|
69+50	0.1120	0.01	Q	|	V|	|	|
69+55	0.1120	0.01	Q	|	V|	|	|
70+ 0	0.1121	0.01	Q	|	V|	|	|
70+ 5	0.1121	0.01	Q	|	V|	|	|
70+10	0.1122	0.01	Q	|	V|	|	|
70+15	0.1122	0.01	Q	|	V|	|	|
70+20	0.1123	0.01	Q	|	V|	|	|
70+25	0.1123	0.01	Q	|	V|	|	|
70+30	0.1124	0.01	Q	|	V|	|	|
70+35	0.1124	0.01	Q	|	V|	|	|
70+40	0.1125	0.01	Q	|	V|	|	|
70+45	0.1125	0.01	Q	|	V|	|	|
70+50	0.1125	0.01	Q	|	V|	|	|
70+55	0.1126	0.01	Q	|	V|	|	|
71+ 0	0.1126	0.01	Q	|	V|	|	|
71+ 5	0.1127	0.01	Q	|	V|	|	|
71+10	0.1127	0.01	Q	|	V|	|	|
71+15	0.1127	0.01	Q	|	V|	|	|
71+20	0.1128	0.01	Q	|	V|	|	|
71+25	0.1128	0.01	Q	|	V|	|	|
71+30	0.1129	0.01	Q	|	V|	|	|
71+35	0.1129	0.01	Q	|	V|	|	|
71+40	0.1129	0.01	Q	|	V|	|	|
71+45	0.1130	0.01	Q	|	V|	|	|
71+50	0.1130	0.01	Q	|	V|	|	|
71+55	0.1130	0.01	Q	|	V|	|	|
72+ 0	0.1131	0.01	Q	|	V|	|	|
72+ 5	0.1132	0.01	Q	|	V|	|	|
72+10	0.1133	0.02	Q	|	V|	|	|
72+15	0.1134	0.02	Q	|	V|	|	|
72+20	0.1135	0.02	Q	|	V|	|	|
72+25	0.1137	0.02	Q	|	V|	|	|
72+30	0.1138	0.02	Q	|	V|	|	|
72+35	0.1140	0.02	Q	|	V|	|	|
72+40	0.1142	0.02	Q	|	V|	|	|
72+45	0.1143	0.02	Q	|	V|	|	|
72+50	0.1145	0.03	Q	|	V|	|	|
72+55	0.1148	0.03	Q	|	V|	|	|
73+ 0	0.1150	0.03	Q	|	V|	|	|
73+ 5	0.1152	0.03	Q	|	V|	|	|
73+10	0.1153	0.02	Q	|	V|	|	|
73+15	0.1155	0.02	Q	|	V|	|	|
73+20	0.1157	0.02	Q	|	V|	|	|
73+25	0.1158	0.02	Q	|	V|	|	|
73+30	0.1160	0.02	Q	|	V|	|	|
73+35	0.1162	0.02	Q	|	V|	|	|

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73+40       0.1163      0.02  Q          |         V|          |          |
73+45       0.1165      0.02  Q          |          V          |          |
73+50       0.1167      0.03  Q          |          V          |          |
73+55       0.1169      0.03  Q          |          V          |          |
74+ 0       0.1171      0.03  Q          |          V          |          |
74+ 5       0.1174      0.03  Q          |          V          |          |
74+10       0.1176      0.03  Q          |          V          |          |
74+15       0.1178      0.03  Q          |          V          |          |
74+20       0.1180      0.03  Q          |          V          |          |
74+25       0.1183      0.03  Q          |          V          |          |
74+30       0.1185      0.03  Q          |          V          |          |
74+35       0.1187      0.04  Q          |          V          |          |
74+40       0.1190      0.04  Q          |          V          |          |
74+45       0.1193      0.04  Q          |          V          |          |
74+50       0.1196      0.04  Q          |          V          |          |
74+55       0.1198      0.04  Q          |          V          |          |
75+ 0       0.1201      0.04  Q          |          V          |          |
75+ 5       0.1204      0.04  Q          |          V          |          |
75+10       0.1207      0.04  Q          |          V          |          |
75+15       0.1210      0.04  Q          |          V          |          |
75+20       0.1212      0.04  Q          |          V          |          |
75+25       0.1215      0.04  Q          |          V          |          |
75+30       0.1218      0.04  Q          |          V          |          |
75+35       0.1221      0.04  Q          |          V          |          |
75+40       0.1223      0.04  Q          |          |V         |          |
75+45       0.1226      0.04  Q          |          |V         |          |
75+50       0.1229      0.05  Q          |          |V         |          |
75+55       0.1233      0.05  Q          |          |V         |          |
76+ 0       0.1236      0.05  Q          |          |V         |          |
76+ 5       0.1239      0.05  Q          |          |V         |          |
76+10       0.1243      0.05  Q          |          |V         |          |
76+15       0.1246      0.05  Q          |          |V         |          |
76+20       0.1250      0.05  Q          |          |V         |          |
76+25       0.1253      0.06  Q          |          |V         |          |
76+30       0.1257      0.06  Q          |          |V         |          |
76+35       0.1261      0.06  Q          |          |V         |          |
76+40       0.1265      0.06  Q          |          |V         |          |
76+45       0.1269      0.06  Q          |          |V         |          |
76+50       0.1273      0.06  Q          |          |V         |          |
76+55       0.1278      0.06  Q          |          |V         |          |
77+ 0       0.1282      0.06  Q          |          | V        |          |
77+ 5       0.1286      0.05  Q          |          | V        |          |
77+10       0.1289      0.05  Q          |          | V        |          |
77+15       0.1292      0.05  Q          |          | V        |          |
77+20       0.1296      0.05  Q          |          | V        |          |
77+25       0.1300      0.06  Q          |          | V        |          |
77+30       0.1304      0.06  Q          |          | V        |          |
77+35       0.1308      0.06  Q          |          | V        |          |
77+40       0.1312      0.06  Q          |          | V        |          |
77+45       0.1317      0.06  Q          |          | V        |          |
77+50       0.1321      0.06  Q          |          | V        |          |
77+55       0.1326      0.06  Q          |          | V        |          |
78+ 0       0.1330      0.06  Q          |          | V        |          |
78+ 5       0.1335      0.07  Q          |          | V        |          |
78+10       0.1340      0.07  Q          |          |  V       |          |
78+15       0.1345      0.07  Q          |          |  V       |          |
78+20       0.1350      0.07  Q          |          |  V       |          |
78+25       0.1355      0.07  Q          |          |  V       |          |
78+30       0.1360      0.07  Q          |          |  V       |          |
78+35       0.1365      0.08  Q          |          |  V       |          |
78+40       0.1371      0.08  Q          |          |  V       |          |
78+45       0.1376      0.08  Q          |          |  V       |          |
78+50       0.1382      0.08  Q          |          |  V       |          |
78+55       0.1387      0.08  Q          |          |  V       |          |
79+ 0       0.1393      0.08  Q          |          |  V       |          |
79+ 5       0.1398      0.08  Q          |          |   V      |          |
79+10       0.1404      0.08  Q          |          |   V      |          |
79+15       0.1410      0.08  Q          |          |   V      |          |
79+20       0.1415      0.09  Q          |          |   V      |          |
79+25       0.1422      0.09  Q          |          |   V      |          |
79+30       0.1428      0.09  Q          |          |   V      |          |
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79+35       0.1434      0.09  Q          |          |   V     |          |
79+40       0.1441      0.10  Q          |          |   V     |          |
79+45       0.1447      0.10  Q          |          |   V     |          |
79+50       0.1454      0.10  Q          |          |   V     |          |
79+55       0.1462      0.10  Q          |          |    V    |          |
80+ 0       0.1469      0.10  Q          |          |    V    |          |
80+ 5       0.1477      0.11  Q          |          |    V    |          |
80+10       0.1485      0.12  Q          |          |    V    |          |
80+15       0.1493      0.12  Q          |          |    V    |          |
80+20       0.1501      0.12  Q          |          |    V    |          |
80+25       0.1510      0.12  Q          |          |    V    |          |
80+30       0.1518      0.12  Q          |          |     V   |          |
80+35       0.1521      0.05  Q          |          |     V   |          |
80+40       0.1522      0.01  Q          |          |     V   |          |
80+45       0.1522      0.00  Q          |          |     V   |          |
80+50       0.1523      0.01  Q          |          |     V   |          |
80+55       0.1524      0.01  Q          |          |     V   |          |
81+ 0       0.1525      0.02  Q          |          |     V   |          |
81+ 5       0.1527      0.03  Q          |          |     V   |          |
81+10       0.1529      0.04  Q          |          |     V   |          |
81+15       0.1532      0.04  Q          |          |     V   |          |
81+20       0.1535      0.05  Q          |          |     V   |          |
81+25       0.1539      0.05  Q          |          |     V   |          |
81+30       0.1543      0.05  Q          |          |     V   |          |
81+35       0.1547      0.06  Q          |          |     V   |          |
81+40       0.1551      0.07  Q          |          |     V   |          |
81+45       0.1556      0.07  Q          |          |     V   |          |
81+50       0.1561      0.07  Q          |          |     V   |          |
81+55       0.1567      0.08  Q          |          |     V   |          |
82+ 0       0.1572      0.08  Q          |          |      V  |          |
82+ 5       0.1575      0.03  Q          |          |      V  |          |
82+10       0.1575      0.01  Q          |          |      V  |          |
82+15       0.1575      0.01  Q          |          |      V  |          |
82+20       0.1576      0.01  Q          |          |      V  |          |
82+25       0.1576      0.01  Q          |          |      V  |          |
82+30       0.1577      0.01  Q          |          |      V  |          |
82+35       0.1580      0.04  Q          |          |      V  |          |
82+40       0.1584      0.06  Q          |          |      V  |          |
82+45       0.1588      0.07  Q          |          |      V  |          |
82+50       0.1593      0.07  Q          |          |      V  |          |
82+55       0.1598      0.07  Q          |          |      V  |          |
83+ 0       0.1602      0.07  Q          |          |      V  |          |
83+ 5       0.1607      0.06  Q          |          |      V  |          |
83+10       0.1611      0.06  Q          |          |      V  |          |
83+15       0.1615      0.06  Q          |          |      V  |          |
83+20       0.1619      0.06  Q          |          |      V  |          |
83+25       0.1623      0.06  Q          |          |      V  |          |
83+30       0.1627      0.06  Q          |          |      V  |          |
83+35       0.1630      0.05  Q          |          |       V |          |
83+40       0.1633      0.04  Q          |          |       V |          |
83+45       0.1636      0.04  Q          |          |       V |          |
83+50       0.1639      0.05  Q          |          |       V |          |
83+55       0.1643      0.05  Q          |          |       V |          |
84+ 0       0.1647      0.05  Q          |          |       V |          |
84+ 5       0.1654      0.10  Q          |          |       V |          |
84+10       0.1663      0.13  Q          |          |       V |          |
84+15       0.1672      0.13  Q          |          |       V |          |
84+20       0.1682      0.14  Q          |          |       V |          |
84+25       0.1692      0.15  Q          |          |        V|          |
84+30       0.1702      0.15  Q          |          |        V|          |
84+35       0.1713      0.16  Q          |          |        V|          |
84+40       0.1725      0.17  Q          |          |        V|          |
84+45       0.1737      0.17  Q          |          |        V|          |
84+50       0.1749      0.18  Q          |          |         V          |
84+55       0.1762      0.18  Q          |          |         V          |
85+ 0       0.1775      0.19  Q          |          |         V          |
85+ 5       0.1790      0.22  Q          |          |         V          |
85+10       0.1806      0.24  Q          |          |         |V         |
85+15       0.1823      0.24  Q          |          |         |V         |
85+20       0.1840      0.24  Q          |          |         |V         |
85+25       0.1857      0.24  Q          |          |         |V         |
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85+30       0.1874      0.25  Q          |          |          | V       |
85+35       0.1885      0.17  Q          |          |          | V       |
85+40       0.1894      0.13  Q          |          |          | V       |
85+45       0.1903      0.12  Q          |          |          | V       |
85+50       0.1912      0.13  Q          |          |          | V       |
85+55       0.1920      0.13  Q          |          |          |  V      |
86+ 0       0.1929      0.13  Q          |          |          |  V      |
86+ 5       0.1940      0.15  Q          |          |          |  V      |
86+10       0.1951      0.17  Q          |          |          |  V      |
86+15       0.1963      0.17  Q          |          |          |  V      |
86+20       0.1975      0.17  Q          |          |          |  V      |
86+25       0.1986      0.16  Q          |          |          |   V     |
86+30       0.1997      0.16  Q          |          |          |   V     |
86+35       0.2009      0.16  Q          |          |          |   V     |
86+40       0.2020      0.17  Q          |          |          |   V     |
86+45       0.2031      0.17  Q          |          |          |   V     |
86+50       0.2042      0.16  Q          |          |          |    V    |
86+55       0.2053      0.16  Q          |          |          |    V    |
87+ 0       0.2064      0.16  Q          |          |          |    V    |
87+ 5       0.2074      0.15  Q          |          |          |    V    |
87+10       0.2085      0.15  Q          |          |          |    V    |
87+15       0.2095      0.15  Q          |          |          |     V   |
87+20       0.2104      0.14  Q          |          |          |     V   |
87+25       0.2114      0.14  Q          |          |          |     V   |
87+30       0.2123      0.14  Q          |          |          |     V   |
87+35       0.2131      0.11  Q          |          |          |     V   |
87+40       0.2138      0.10  Q          |          |          |     V   |
87+45       0.2144      0.10  Q          |          |          |     V   |
87+50       0.2151      0.10  Q          |          |          |     V   |
87+55       0.2158      0.10  Q          |          |          |      V  |
88+ 0       0.2164      0.10  Q          |          |          |      V  |
88+ 5       0.2168      0.06  Q          |          |          |      V  |
88+10       0.2171      0.04  Q          |          |          |      V  |
88+15       0.2173      0.03  Q          |          |          |      V  |
88+20       0.2175      0.03  Q          |          |          |      V  |
88+25       0.2177      0.03  Q          |          |          |      V  |
88+30       0.2180      0.03  Q          |          |          |      V  |
88+35       0.2182      0.03  Q          |          |          |      V  |
88+40       0.2183      0.02  Q          |          |          |      V  |
88+45       0.2185      0.02  Q          |          |          |      V  |
88+50       0.2187      0.02  Q          |          |          |      V  |
88+55       0.2188      0.02  Q          |          |          |      V  |
89+ 0       0.2190      0.02  Q          |          |          |      V  |
89+ 5       0.2192      0.03  Q          |          |          |      V  |
89+10       0.2195      0.04  Q          |          |          |      V  |
89+15       0.2198      0.04  Q          |          |          |      V  |
89+20       0.2201      0.04  Q          |          |          |      V  |
89+25       0.2203      0.04  Q          |          |          |      V  |
89+30       0.2206      0.04  Q          |          |          |      V  |
89+35       0.2209      0.04  Q          |          |          |      V  |
89+40       0.2212      0.04  Q          |          |          |       V |
89+45       0.2214      0.04  Q          |          |          |       V |
89+50       0.2217      0.04  Q          |          |          |       V |
89+55       0.2219      0.03  Q          |          |          |       V |
90+ 0       0.2221      0.03  Q          |          |          |       V |
90+ 5       0.2224      0.03  Q          |          |          |       V |
90+10       0.2226      0.03  Q          |          |          |       V |
90+15       0.2228      0.03  Q          |          |          |       V |
90+20       0.2230      0.03  Q          |          |          |       V |
90+25       0.2232      0.03  Q          |          |          |       V |
90+30       0.2235      0.03  Q          |          |          |       V |
90+35       0.2236      0.03  Q          |          |          |       V |
90+40       0.2238      0.02  Q          |          |          |       V |
90+45       0.2240      0.02  Q          |          |          |       V |
90+50       0.2241      0.02  Q          |          |          |       V |
90+55       0.2242      0.02  Q          |          |          |       V |
91+ 0       0.2243      0.02  Q          |          |          |       V |
91+ 5       0.2245      0.02  Q          |          |          |       V |
91+10       0.2246      0.02  Q          |          |          |       V |
91+15       0.2248      0.02  Q          |          |          |       V |
91+20       0.2250      0.03  Q          |          |          |       V |
```

```
  91+25       0.2252      0.03  Q          |          |          |        V |
  91+30       0.2255      0.03  Q          |          |          |        V |
  91+35       0.2256      0.03  Q          |          |          |        V |
  91+40       0.2258      0.02  Q          |          |          |        V |
  91+45       0.2260      0.02  Q          |          |          |        V |
  91+50       0.2261      0.02  Q          |          |          |        V |
  91+55       0.2262      0.02  Q          |          |          |        V |
  92+ 0       0.2263      0.02  Q          |          |          |        V |
  92+ 5       0.2265      0.02  Q          |          |          |        V |
  92+10       0.2266      0.02  Q          |          |          |        V |
  92+15       0.2268      0.02  Q          |          |          |        V |
  92+20       0.2270      0.02  Q          |          |          |         V|
  92+25       0.2271      0.02  Q          |          |          |         V|
  92+30       0.2273      0.02  Q          |          |          |         V|
  92+35       0.2275      0.02  Q          |          |          |         V|
  92+40       0.2276      0.02  Q          |          |          |         V|
  92+45       0.2278      0.02  Q          |          |          |         V|
  92+50       0.2279      0.02  Q          |          |          |         V|
  92+55       0.2281      0.02  Q          |          |          |         V|
  93+ 0       0.2282      0.02  Q          |          |          |         V|
  93+ 5       0.2283      0.02  Q          |          |          |         V|
  93+10       0.2285      0.02  Q          |          |          |         V|
  93+15       0.2286      0.02  Q          |          |          |         V|
  93+20       0.2288      0.02  Q          |          |          |         V|
  93+25       0.2289      0.02  Q          |          |          |         V|
  93+30       0.2290      0.02  Q          |          |          |         V|
  93+35       0.2291      0.02  Q          |          |          |         V|
  93+40       0.2293      0.02  Q          |          |          |         V|
  93+45       0.2295      0.02  Q          |          |          |         V|
  93+50       0.2296      0.02  Q          |          |          |         V|
  93+55       0.2297      0.02  Q          |          |          |         V|
  94+ 0       0.2298      0.02  Q          |          |          |         V|
  94+ 5       0.2300      0.02  Q          |          |          |         V|
  94+10       0.2301      0.02  Q          |          |          |         V|
  94+15       0.2303      0.02  Q          |          |          |         V|
  94+20       0.2304      0.02  Q          |          |          |         V|
  94+25       0.2306      0.02  Q          |          |          |         V|
  94+30       0.2307      0.02  Q          |          |          |         V|
  94+35       0.2308      0.02  Q          |          |          |         V|
  94+40       0.2309      0.02  Q          |          |          |         V|
  94+45       0.2310      0.02  Q          |          |          |         V|
  94+50       0.2311      0.02  Q          |          |          |         V|
  94+55       0.2312      0.02  Q          |          |          |         V|
  95+ 0       0.2313      0.02  Q          |          |          |         V|
  95+ 5       0.2314      0.02  Q          |          |          |         V|
  95+10       0.2315      0.02  Q          |          |          |         V|
  95+15       0.2317      0.02  Q          |          |          |         V|
  95+20       0.2318      0.02  Q          |          |          |         V|
  95+25       0.2319      0.02  Q          |          |          |         V|
  95+30       0.2320      0.02  Q          |          |          |         V|
  95+35       0.2321      0.02  Q          |          |          |         V|
  95+40       0.2322      0.02  Q          |          |          |         V|
  95+45       0.2323      0.02  Q          |          |          |         V|
  95+50       0.2324      0.02  Q          |          |          |         V|
  95+55       0.2325      0.02  Q          |          |          |         V|
  96+ 0       0.2327      0.02  Q          |          |          |         V|
  96+ 5       0.2327      0.01  Q          |          |          |         V|
  96+10       0.2327      0.00  Q          |          |          |          V
-----------------------------------------------------------------------
```

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: BEAUMONTDEV310.out


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
10 YEAR, 3 HOUR STORM
DEVELOPED CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     525.00(Ft.)
Length along longest watercourse measured to centroid =     345.00(Ft.)
Length along longest watercourse =      0.099 Mi.
Length along longest watercourse measured to centroid =      0.065 Mi.
Difference in elevation =       5.44(Ft.)
Slope along watercourse =     54.7109 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.025 Hr.
Lag time =     1.49 Min.
25% of lag time =     0.37 Min.
40% of lag time =     0.60 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           0.97                  0.98

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.54                  2.57

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.971(In)
Area Averaged 100-Year Rainfall =    2.540(In)

Point rain (area averaged) =    1.616(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.616(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           56.00         0.780
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	56.0	0.511	0.780	0.152	1.000	0.152
					Sum (F) =	0.152

Area averaged mean soil loss (F) (In/Hr) = 0.152
Minimum soil loss rate ((In/Hr)) = 0.076
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.276

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	335.676	60.069	0.611
2	0.167	671.352	35.248	0.359
3	0.250	1007.028	4.683	0.048
		Sum =	100.000	Sum= 1.018

Storm Event 4 Effective Rainfall = 0.242(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.038	0.152	0.010	0.03
2	0.17	1.30	0.038	0.152	0.010	0.03
3	0.25	1.10	0.032	0.152	0.009	0.02
4	0.33	1.50	0.044	0.152	0.012	0.03
5	0.42	1.50	0.044	0.152	0.012	0.03
6	0.50	1.80	0.052	0.152	0.014	0.04
7	0.58	1.50	0.044	0.152	0.012	0.03
8	0.67	1.80	0.052	0.152	0.014	0.04
9	0.75	1.80	0.052	0.152	0.014	0.04
10	0.83	1.50	0.044	0.152	0.012	0.03
11	0.92	1.60	0.047	0.152	0.013	0.03
12	1.00	1.80	0.052	0.152	0.014	0.04
13	1.08	2.20	0.064	0.152	0.018	0.05
14	1.17	2.20	0.064	0.152	0.018	0.05
15	1.25	2.20	0.064	0.152	0.018	0.05
16	1.33	2.00	0.058	0.152	0.016	0.04
17	1.42	2.60	0.076	0.152	0.021	0.05
18	1.50	2.70	0.079	0.152	0.022	0.06
19	1.58	2.40	0.070	0.152	0.019	0.05
20	1.67	2.70	0.079	0.152	0.022	0.06
21	1.75	3.30	0.096	0.152	0.027	0.07
22	1.83	3.10	0.090	0.152	0.025	0.07
23	1.92	2.90	0.084	0.152	0.023	0.06
24	2.00	3.00	0.087	0.152	0.024	0.06
25	2.08	3.10	0.090	0.152	0.025	0.07
26	2.17	4.20	0.122	0.152	0.034	0.09
27	2.25	5.00	0.145	0.152	0.040	0.11
28	2.33	3.50	0.102	0.152	0.028	0.07
29	2.42	6.80	0.198	0.152	---	0.05
30	2.50	7.30	0.212	0.152	---	0.06
31	2.58	8.20	0.239	0.152	---	0.09
32	2.67	5.90	0.172	0.152	---	0.02
33	2.75	2.00	0.058	0.152	0.016	0.04
34	2.83	1.80	0.052	0.152	0.014	0.04
35	2.92	1.80	0.052	0.152	0.014	0.04
36	3.00	0.60	0.017	0.152	0.005	0.01
	Sum =	100.0			Sum =	1.7

Flood volume = Effective rainfall 0.14(In)

```
        times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
       Total soil loss =      0.10(In)
       Total soil loss =     0.008(Ac.Ft)
       Total rainfall =      0.24(In)
       Flood volume =         526.8 Cubic Feet
       Total soil loss =         362.2 Cubic Feet
----------------------------------------------------------------------
          Storm Event 3   Effective Rainfall =   0.307(In)
----------------------------------------------------------------------
```

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.048	0.152	0.013	0.03
2	0.17	1.30	0.048	0.152	0.013	0.03
3	0.25	1.10	0.041	0.152	0.011	0.03
4	0.33	1.50	0.055	0.152	0.015	0.04
5	0.42	1.50	0.055	0.152	0.015	0.04
6	0.50	1.80	0.066	0.152	0.018	0.05
7	0.58	1.50	0.055	0.152	0.015	0.04
8	0.67	1.80	0.066	0.152	0.018	0.05
9	0.75	1.80	0.066	0.152	0.018	0.05
10	0.83	1.50	0.055	0.152	0.015	0.04
11	0.92	1.60	0.059	0.152	0.016	0.04
12	1.00	1.80	0.066	0.152	0.018	0.05
13	1.08	2.20	0.081	0.152	0.022	0.06
14	1.17	2.20	0.081	0.152	0.022	0.06
15	1.25	2.20	0.081	0.152	0.022	0.06
16	1.33	2.00	0.074	0.152	0.020	0.05
17	1.42	2.60	0.096	0.152	0.026	0.07
18	1.50	2.70	0.100	0.152	0.027	0.07
19	1.58	2.40	0.088	0.152	0.024	0.06
20	1.67	2.70	0.100	0.152	0.027	0.07
21	1.75	3.30	0.122	0.152	0.034	0.09
22	1.83	3.10	0.114	0.152	0.032	0.08
23	1.92	2.90	0.107	0.152	0.029	0.08
24	2.00	3.00	0.111	0.152	0.031	0.08
25	2.08	3.10	0.114	0.152	0.032	0.08
26	2.17	4.20	0.155	0.152	---	0.00
27	2.25	5.00	0.184	0.152	---	0.03
28	2.33	3.50	0.129	0.152	0.036	0.09
29	2.42	6.80	0.251	0.152	---	0.10
30	2.50	7.30	0.269	0.152	---	0.12
31	2.58	8.20	0.302	0.152	---	0.15
32	2.67	5.90	0.217	0.152	---	0.07
33	2.75	2.00	0.074	0.152	0.020	0.05
34	2.83	1.80	0.066	0.152	0.018	0.05
35	2.92	1.80	0.066	0.152	0.018	0.05
36	3.00	0.60	0.022	0.152	0.006	0.02
	Sum =	100.0			Sum =	2.1

```
       Flood volume = Effective rainfall      0.18(In)
        times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
       Total soil loss =      0.13(In)
       Total soil loss =     0.011(Ac.Ft)
       Total rainfall =      0.31(In)
       Flood volume =         652.5 Cubic Feet
       Total soil loss =         473.6 Cubic Feet
----------------------------------------------------------------------
          Storm Event 2   Effective Rainfall =   0.582(In)
----------------------------------------------------------------------
```

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.091	0.152	0.025	0.07
2	0.17	1.30	0.091	0.152	0.025	0.07
3	0.25	1.10	0.077	0.152	0.021	0.06
4	0.33	1.50	0.105	0.152	0.029	0.08
5	0.42	1.50	0.105	0.152	0.029	0.08
6	0.50	1.80	0.126	0.152	0.035	0.09
7	0.58	1.50	0.105	0.152	0.029	0.08
8	0.67	1.80	0.126	0.152	0.035	0.09
9	0.75	1.80	0.126	0.152	0.035	0.09

10	0.83	1.50	0.105	0.152	0.029	0.08
11	0.92	1.60	0.112	0.152	0.031	0.08
12	1.00	1.80	0.126	0.152	0.035	0.09
13	1.08	2.20	0.154	0.152	---	0.00
14	1.17	2.20	0.154	0.152	---	0.00
15	1.25	2.20	0.154	0.152	---	0.00
16	1.33	2.00	0.140	0.152	0.039	0.10
17	1.42	2.60	0.182	0.152	---	0.03
18	1.50	2.70	0.189	0.152	---	0.04
19	1.58	2.40	0.168	0.152	---	0.02
20	1.67	2.70	0.189	0.152	---	0.04
21	1.75	3.30	0.230	0.152	---	0.08
22	1.83	3.10	0.216	0.152	---	0.06
23	1.92	2.90	0.203	0.152	---	0.05
24	2.00	3.00	0.209	0.152	---	0.06
25	2.08	3.10	0.216	0.152	---	0.06
26	2.17	4.20	0.293	0.152	---	0.14
27	2.25	5.00	0.349	0.152	---	0.20
28	2.33	3.50	0.244	0.152	---	0.09
29	2.42	6.80	0.475	0.152	---	0.32
30	2.50	7.30	0.510	0.152	---	0.36
31	2.58	8.20	0.573	0.152	---	0.42
32	2.67	5.90	0.412	0.152	---	0.26
33	2.75	2.00	0.140	0.152	0.039	0.10
34	2.83	1.80	0.126	0.152	0.035	0.09
35	2.92	1.80	0.126	0.152	0.035	0.09
36	3.00	0.60	0.042	0.152	0.012	0.03
	Sum =	100.0			Sum =	3.6

Flood volume = Effective rainfall 0.30(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.28(In)
Total soil loss = 0.024(Ac.Ft)
Total rainfall = 0.58(In)
Flood volume = 1092.7 Cubic Feet
Total soil loss = 1040.9 Cubic Feet

Storm Event 1 Effective Rainfall = 1.616(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.252	0.152	---	0.10
2	0.17	1.30	0.252	0.152	---	0.10
3	0.25	1.10	0.213	0.152	---	0.06
4	0.33	1.50	0.291	0.152	---	0.14
5	0.42	1.50	0.291	0.152	---	0.14
6	0.50	1.80	0.349	0.152	---	0.20
7	0.58	1.50	0.291	0.152	---	0.14
8	0.67	1.80	0.349	0.152	---	0.20
9	0.75	1.80	0.349	0.152	---	0.20
10	0.83	1.50	0.291	0.152	---	0.14
11	0.92	1.60	0.310	0.152	---	0.16
12	1.00	1.80	0.349	0.152	---	0.20
13	1.08	2.20	0.427	0.152	---	0.27
14	1.17	2.20	0.427	0.152	---	0.27
15	1.25	2.20	0.427	0.152	---	0.27
16	1.33	2.00	0.388	0.152	---	0.24
17	1.42	2.60	0.504	0.152	---	0.35
18	1.50	2.70	0.524	0.152	---	0.37
19	1.58	2.40	0.466	0.152	---	0.31
20	1.67	2.70	0.524	0.152	---	0.37
21	1.75	3.30	0.640	0.152	---	0.49
22	1.83	3.10	0.601	0.152	---	0.45
23	1.92	2.90	0.563	0.152	---	0.41
24	2.00	3.00	0.582	0.152	---	0.43
25	2.08	3.10	0.601	0.152	---	0.45
26	2.17	4.20	0.815	0.152	---	0.66
27	2.25	5.00	0.970	0.152	---	0.82
28	2.33	3.50	0.679	0.152	---	0.53
29	2.42	6.80	1.319	0.152	---	1.17
30	2.50	7.30	1.416	0.152	---	1.26

```
31   2.58     8.20      1.591         0.152      ---          1.44
32   2.67     5.90      1.144         0.152      ---          0.99
33   2.75     2.00      0.388         0.152      ---          0.24
34   2.83     1.80      0.349         0.152      ---          0.20
35   2.92     1.80      0.349         0.152      ---          0.20
36   3.00     0.60      0.116         0.152     0.032         0.08
   Sum =     100.0                                    Sum =    14.0
      Flood volume = Effective rainfall      1.17(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      0.45(In)
      Total soil loss =     0.038(Ac.Ft)
      Total rainfall =      1.62(In)
      Flood volume =        4289.0 Cubic Feet
      Total soil loss =        1637.5 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      1.389(CFS)
      ---------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       3 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q         |         |         |         |
  0+10       0.0003      0.03  Q         |         |         |         |
  0+15       0.0005      0.03  Q         |         |         |         |
  0+20       0.0007      0.03  Q         |         |         |         |
  0+25       0.0009      0.03  Q         |         |         |         |
  0+30       0.0011      0.04  Q         |         |         |         |
  0+35       0.0014      0.03  Q         |         |         |         |
  0+40       0.0016      0.04  Q         |         |         |         |
  0+45       0.0019      0.04  Q         |         |         |         |
  0+50       0.0021      0.03  Q         |         |         |         |
  0+55       0.0024      0.03  Q         |         |         |         |
  1+ 0       0.0026      0.04  Q         |         |         |         |
  1+ 5       0.0029      0.04  Q         |         |         |         |
  1+10       0.0032      0.05  Q         |         |         |         |
  1+15       0.0036      0.05  Q         |         |         |         |
  1+20       0.0039      0.04  QV        |         |         |         |
  1+25       0.0042      0.05  QV        |         |         |         |
  1+30       0.0046      0.06  QV        |         |         |         |
  1+35       0.0050      0.05  QV        |         |         |         |
  1+40       0.0054      0.06  QV        |         |         |         |
  1+45       0.0058      0.07  QV        |         |         |         |
  1+50       0.0063      0.07  QV        |         |         |         |
  1+55       0.0067      0.06  QV        |         |         |         |
  2+ 0       0.0072      0.06  QV        |         |         |         |
  2+ 5       0.0076      0.07  Q V       |         |         |         |
  2+10       0.0082      0.08  Q V       |         |         |         |
  2+15       0.0089      0.10  Q V       |         |         |         |
  2+20       0.0095      0.09  Q V       |         |         |         |
  2+25       0.0099      0.06  Q V       |         |         |         |
  2+30       0.0103      0.06  Q V       |         |         |         |
  2+35       0.0108      0.08  Q V       |         |         |         |
  2+40       0.0111      0.05  Q V       |         |         |         |
  2+45       0.0113      0.04  Q  V      |         |         |         |
  2+50       0.0116      0.04  Q  V      |         |         |         |
  2+55       0.0119      0.04  Q  V      |         |         |         |
  3+ 0       0.0120      0.02  Q  V      |         |         |         |
  3+ 5       0.0122      0.02  Q  V      |         |         |         |
  3+10       0.0124      0.03  Q  V      |         |         |         |
  3+15       0.0126      0.03  Q  V      |         |         |         |
  3+20       0.0129      0.04  Q  V      |         |         |         |
  3+25       0.0132      0.04  Q  V      |         |         |         |
  3+30       0.0135      0.05  Q  V      |         |         |         |
  3+35       0.0138      0.04  Q  V      |         |         |         |
  3+40       0.0141      0.05  Q  V      |         |         |         |
  3+45       0.0144      0.05  Q  V      |         |         |         |
```

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3+50       0.0147      0.04  Q  V      |         |         |         |
3+55       0.0150      0.04  Q  V      |         |         |         |
4+ 0       0.0154      0.05  Q   V     |         |         |         |
4+ 5       0.0157      0.06  Q   V     |         |         |         |
4+10       0.0161      0.06  Q   V     |         |         |         |
4+15       0.0166      0.06  Q   V     |         |         |         |
4+20       0.0169      0.06  Q   V     |         |         |         |
4+25       0.0174      0.06  Q   V     |         |         |         |
4+30       0.0179      0.07  Q   V     |         |         |         |
4+35       0.0184      0.07  Q   V     |         |         |         |
4+40       0.0188      0.07  Q    V    |         |         |         |
4+45       0.0194      0.08  Q    V    |         |         |         |
4+50       0.0200      0.09  Q    V    |         |         |         |
4+55       0.0206      0.08  Q    V    |         |         |         |
5+ 0       0.0211      0.08  Q    V    |         |         |         |
5+ 5       0.0217      0.08  Q    V    |         |         |         |
5+10       0.0219      0.04  Q    V    |         |         |         |
5+15       0.0221      0.02  Q    V    |         |         |         |
5+20       0.0226      0.07  Q     V   |         |         |         |
5+25       0.0232      0.10  Q     V   |         |         |         |
5+30       0.0240      0.11  Q     V   |         |         |         |
5+35       0.0249      0.14  Q     V   |         |         |         |
5+40       0.0256      0.10  Q     V   |         |         |         |
5+45       0.0261      0.06  Q     V   |         |         |         |
5+50       0.0264      0.05  Q      V  |         |         |         |
5+55       0.0268      0.05  Q      V  |         |         |         |
6+ 0       0.0270      0.03  Q      V  |         |         |         |
6+ 5       0.0272      0.04  Q      V  |         |         |         |
6+10       0.0277      0.06  Q      V  |         |         |         |
6+15       0.0281      0.06  Q      V  |         |         |         |
6+20       0.0286      0.07  Q      V  |         |         |         |
6+25       0.0291      0.08  Q      V  |         |         |         |
6+30       0.0297      0.09  Q      V  |         |         |         |
6+35       0.0303      0.08  Q       V |         |         |         |
6+40       0.0309      0.09  Q       V |         |         |         |
6+45       0.0315      0.09  Q       V |         |         |         |
6+50       0.0321      0.08  Q       V |         |         |         |
6+55       0.0326      0.08  Q       V |         |         |         |
7+ 0       0.0332      0.09  Q       V |         |         |         |
7+ 5       0.0335      0.04  Q       V |         |         |         |
7+10       0.0335      0.01  Q       V |         |         |         |
7+15       0.0335      0.00  Q       V |         |         |         |
7+20       0.0340      0.06  Q        V|         |         |         |
7+25       0.0344      0.05  Q        V|         |         |         |
7+30       0.0346      0.04  Q        V|         |         |         |
7+35       0.0348      0.02  Q        V|         |         |         |
7+40       0.0350      0.03  Q        V|         |         |         |
7+45       0.0354      0.06  Q        V|         |         |         |
7+50       0.0359      0.07  Q        V|         |         |         |
7+55       0.0363      0.06  Q        V|         |         |         |
8+ 0       0.0367      0.06  Q        V|         |         |         |
8+ 5       0.0371      0.06  Q        V|         |         |         |
8+10       0.0379      0.11  Q         V         |         |         |
8+15       0.0391      0.17  Q         V         |         |         |
8+20       0.0400      0.13  Q         V         |         |         |
```

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       U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  05/04/20 File: BEAUMONTDEV610.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
10 YEAR, 6 HOUR STORM
DEVELOPED CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     525.00(Ft.)
Length along longest watercourse measured to centroid =     345.00(Ft.)
Length along longest watercourse =      0.099 Mi.
Length along longest watercourse measured to centroid =      0.065 Mi.
Difference in elevation =       5.44(Ft.)
Slope along watercourse =     54.7109 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.025 Hr.
Lag time =     1.49 Min.
25% of lag time =     0.37 Min.
40% of lag time =     0.60 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           1.40                  1.41

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           3.38                  3.41

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.400(In)
Area Averaged 100-Year Rainfall =    3.380(In)

Point rain (area averaged) =    2.215(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.215(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           56.00         0.780
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	56.0	0.511	0.780	0.152	1.000	0.152
					Sum (F) =	0.152

Area averaged mean soil loss (F) (In/Hr) = 0.152
Minimum soil loss rate ((In/Hr)) = 0.076
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.276

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	335.676	60.069	0.611
2	0.167	671.352	35.248	0.359
3	0.250	1007.028	4.683	0.048
		Sum = 100.000	Sum=	1.018

Storm Event 4 Effective Rainfall = 0.332(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.020	0.152	0.006	0.01
2	0.17	0.60	0.024	0.152	0.007	0.02
3	0.25	0.60	0.024	0.152	0.007	0.02
4	0.33	0.60	0.024	0.152	0.007	0.02
5	0.42	0.60	0.024	0.152	0.007	0.02
6	0.50	0.70	0.028	0.152	0.008	0.02
7	0.58	0.70	0.028	0.152	0.008	0.02
8	0.67	0.70	0.028	0.152	0.008	0.02
9	0.75	0.70	0.028	0.152	0.008	0.02
10	0.83	0.70	0.028	0.152	0.008	0.02
11	0.92	0.70	0.028	0.152	0.008	0.02
12	1.00	0.80	0.032	0.152	0.009	0.02
13	1.08	0.80	0.032	0.152	0.009	0.02
14	1.17	0.80	0.032	0.152	0.009	0.02
15	1.25	0.80	0.032	0.152	0.009	0.02
16	1.33	0.80	0.032	0.152	0.009	0.02
17	1.42	0.80	0.032	0.152	0.009	0.02
18	1.50	0.80	0.032	0.152	0.009	0.02
19	1.58	0.80	0.032	0.152	0.009	0.02
20	1.67	0.80	0.032	0.152	0.009	0.02
21	1.75	0.80	0.032	0.152	0.009	0.02
22	1.83	0.80	0.032	0.152	0.009	0.02
23	1.92	0.80	0.032	0.152	0.009	0.02
24	2.00	0.90	0.036	0.152	0.010	0.03
25	2.08	0.80	0.032	0.152	0.009	0.02
26	2.17	0.90	0.036	0.152	0.010	0.03
27	2.25	0.90	0.036	0.152	0.010	0.03
28	2.33	0.90	0.036	0.152	0.010	0.03
29	2.42	0.90	0.036	0.152	0.010	0.03
30	2.50	0.90	0.036	0.152	0.010	0.03
31	2.58	0.90	0.036	0.152	0.010	0.03
32	2.67	0.90	0.036	0.152	0.010	0.03
33	2.75	1.00	0.040	0.152	0.011	0.03
34	2.83	1.00	0.040	0.152	0.011	0.03
35	2.92	1.00	0.040	0.152	0.011	0.03
36	3.00	1.00	0.040	0.152	0.011	0.03
37	3.08	1.00	0.040	0.152	0.011	0.03
38	3.17	1.10	0.044	0.152	0.012	0.03

39	3.25	1.10	0.044	0.152	0.012	0.03
40	3.33	1.10	0.044	0.152	0.012	0.03
41	3.42	1.20	0.048	0.152	0.013	0.03
42	3.50	1.30	0.052	0.152	0.014	0.04
43	3.58	1.40	0.056	0.152	0.015	0.04
44	3.67	1.40	0.056	0.152	0.015	0.04
45	3.75	1.50	0.060	0.152	0.017	0.04
46	3.83	1.50	0.060	0.152	0.017	0.04
47	3.92	1.60	0.064	0.152	0.018	0.05
48	4.00	1.60	0.064	0.152	0.018	0.05
49	4.08	1.70	0.068	0.152	0.019	0.05
50	4.17	1.80	0.072	0.152	0.020	0.05
51	4.25	1.90	0.076	0.152	0.021	0.05
52	4.33	2.00	0.080	0.152	0.022	0.06
53	4.42	2.10	0.084	0.152	0.023	0.06
54	4.50	2.10	0.084	0.152	0.023	0.06
55	4.58	2.20	0.088	0.152	0.024	0.06
56	4.67	2.30	0.092	0.152	0.025	0.07
57	4.75	2.40	0.096	0.152	0.026	0.07
58	4.83	2.40	0.096	0.152	0.026	0.07
59	4.92	2.50	0.100	0.152	0.028	0.07
60	5.00	2.60	0.104	0.152	0.029	0.08
61	5.08	3.10	0.124	0.152	0.034	0.09
62	5.17	3.60	0.144	0.152	0.040	0.10
63	5.25	3.90	0.155	0.152	---	0.00
64	5.33	4.20	0.167	0.152	---	0.02
65	5.42	4.70	0.187	0.152	---	0.04
66	5.50	5.60	0.223	0.152	---	0.07
67	5.58	1.90	0.076	0.152	0.021	0.05
68	5.67	0.90	0.036	0.152	0.010	0.03
69	5.75	0.60	0.024	0.152	0.007	0.02
70	5.83	0.50	0.020	0.152	0.006	0.01
71	5.92	0.30	0.012	0.152	0.003	0.01
72	6.00	0.20	0.008	0.152	0.002	0.01
Sum =		100.0			Sum =	2.5

Flood volume = Effective rainfall 0.21(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.13(In)
Total soil loss = 0.011(Ac.Ft)
Total rainfall = 0.33(In)
Flood volume = 757.6 Cubic Feet
Total soil loss = 460.3 Cubic Feet

Storm Event 3 Effective Rainfall = 0.421(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.025	0.152	0.007	0.02
2	0.17	0.60	0.030	0.152	0.008	0.02
3	0.25	0.60	0.030	0.152	0.008	0.02
4	0.33	0.60	0.030	0.152	0.008	0.02
5	0.42	0.60	0.030	0.152	0.008	0.02
6	0.50	0.70	0.035	0.152	0.010	0.03
7	0.58	0.70	0.035	0.152	0.010	0.03
8	0.67	0.70	0.035	0.152	0.010	0.03
9	0.75	0.70	0.035	0.152	0.010	0.03
10	0.83	0.70	0.035	0.152	0.010	0.03
11	0.92	0.70	0.035	0.152	0.010	0.03
12	1.00	0.80	0.040	0.152	0.011	0.03
13	1.08	0.80	0.040	0.152	0.011	0.03
14	1.17	0.80	0.040	0.152	0.011	0.03
15	1.25	0.80	0.040	0.152	0.011	0.03
16	1.33	0.80	0.040	0.152	0.011	0.03
17	1.42	0.80	0.040	0.152	0.011	0.03
18	1.50	0.80	0.040	0.152	0.011	0.03
19	1.58	0.80	0.040	0.152	0.011	0.03
20	1.67	0.80	0.040	0.152	0.011	0.03
21	1.75	0.80	0.040	0.152	0.011	0.03
22	1.83	0.80	0.040	0.152	0.011	0.03
23	1.92	0.80	0.040	0.152	0.011	0.03

24	2.00	0.90	0.045	0.152	0.013	0.03
25	2.08	0.80	0.040	0.152	0.011	0.03
26	2.17	0.90	0.045	0.152	0.013	0.03
27	2.25	0.90	0.045	0.152	0.013	0.03
28	2.33	0.90	0.045	0.152	0.013	0.03
29	2.42	0.90	0.045	0.152	0.013	0.03
30	2.50	0.90	0.045	0.152	0.013	0.03
31	2.58	0.90	0.045	0.152	0.013	0.03
32	2.67	0.90	0.045	0.152	0.013	0.03
33	2.75	1.00	0.050	0.152	0.014	0.04
34	2.83	1.00	0.050	0.152	0.014	0.04
35	2.92	1.00	0.050	0.152	0.014	0.04
36	3.00	1.00	0.050	0.152	0.014	0.04
37	3.08	1.00	0.050	0.152	0.014	0.04
38	3.17	1.10	0.056	0.152	0.015	0.04
39	3.25	1.10	0.056	0.152	0.015	0.04
40	3.33	1.10	0.056	0.152	0.015	0.04
41	3.42	1.20	0.061	0.152	0.017	0.04
42	3.50	1.30	0.066	0.152	0.018	0.05
43	3.58	1.40	0.071	0.152	0.020	0.05
44	3.67	1.40	0.071	0.152	0.020	0.05
45	3.75	1.50	0.076	0.152	0.021	0.05
46	3.83	1.50	0.076	0.152	0.021	0.05
47	3.92	1.60	0.081	0.152	0.022	0.06
48	4.00	1.60	0.081	0.152	0.022	0.06
49	4.08	1.70	0.086	0.152	0.024	0.06
50	4.17	1.80	0.091	0.152	0.025	0.07
51	4.25	1.90	0.096	0.152	0.026	0.07
52	4.33	2.00	0.101	0.152	0.028	0.07
53	4.42	2.10	0.106	0.152	0.029	0.08
54	4.50	2.10	0.106	0.152	0.029	0.08
55	4.58	2.20	0.111	0.152	0.031	0.08
56	4.67	2.30	0.116	0.152	0.032	0.08
57	4.75	2.40	0.121	0.152	0.033	0.09
58	4.83	2.40	0.121	0.152	0.033	0.09
59	4.92	2.50	0.126	0.152	0.035	0.09
60	5.00	2.60	0.131	0.152	0.036	0.10
61	5.08	3.10	0.157	0.152	---	0.00
62	5.17	3.60	0.182	0.152	---	0.03
63	5.25	3.90	0.197	0.152	---	0.04
64	5.33	4.20	0.212	0.152	---	0.06
65	5.42	4.70	0.237	0.152	---	0.09
66	5.50	5.60	0.283	0.152	---	0.13
67	5.58	1.90	0.096	0.152	0.026	0.07
68	5.67	0.90	0.045	0.152	0.013	0.03
69	5.75	0.60	0.030	0.152	0.008	0.02
70	5.83	0.50	0.025	0.152	0.007	0.02
71	5.92	0.30	0.015	0.152	0.004	0.01
72	6.00	0.20	0.010	0.152	0.003	0.01
Sum =		100.0			Sum =	3.1

Flood volume = Effective rainfall 0.26(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.16(In)
Total soil loss = 0.014(Ac.Ft)
Total rainfall = 0.42(In)
Flood volume = 944.7 Cubic Feet
Total soil loss = 597.9 Cubic Feet

Storm Event 2 Effective Rainfall = 0.797(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.048	0.152	0.013	0.03
2	0.17	0.60	0.057	0.152	0.016	0.04
3	0.25	0.60	0.057	0.152	0.016	0.04
4	0.33	0.60	0.057	0.152	0.016	0.04
5	0.42	0.60	0.057	0.152	0.016	0.04
6	0.50	0.70	0.067	0.152	0.018	0.05
7	0.58	0.70	0.067	0.152	0.018	0.05
8	0.67	0.70	0.067	0.152	0.018	0.05

9	0.75	0.70	0.067	0.152	0.018	0.05
10	0.83	0.70	0.067	0.152	0.018	0.05
11	0.92	0.70	0.067	0.152	0.018	0.05
12	1.00	0.80	0.077	0.152	0.021	0.06
13	1.08	0.80	0.077	0.152	0.021	0.06
14	1.17	0.80	0.077	0.152	0.021	0.06
15	1.25	0.80	0.077	0.152	0.021	0.06
16	1.33	0.80	0.077	0.152	0.021	0.06
17	1.42	0.80	0.077	0.152	0.021	0.06
18	1.50	0.80	0.077	0.152	0.021	0.06
19	1.58	0.80	0.077	0.152	0.021	0.06
20	1.67	0.80	0.077	0.152	0.021	0.06
21	1.75	0.80	0.077	0.152	0.021	0.06
22	1.83	0.80	0.077	0.152	0.021	0.06
23	1.92	0.80	0.077	0.152	0.021	0.06
24	2.00	0.90	0.086	0.152	0.024	0.06
25	2.08	0.80	0.077	0.152	0.021	0.06
26	2.17	0.90	0.086	0.152	0.024	0.06
27	2.25	0.90	0.086	0.152	0.024	0.06
28	2.33	0.90	0.086	0.152	0.024	0.06
29	2.42	0.90	0.086	0.152	0.024	0.06
30	2.50	0.90	0.086	0.152	0.024	0.06
31	2.58	0.90	0.086	0.152	0.024	0.06
32	2.67	0.90	0.086	0.152	0.024	0.06
33	2.75	1.00	0.096	0.152	0.026	0.07
34	2.83	1.00	0.096	0.152	0.026	0.07
35	2.92	1.00	0.096	0.152	0.026	0.07
36	3.00	1.00	0.096	0.152	0.026	0.07
37	3.08	1.00	0.096	0.152	0.026	0.07
38	3.17	1.10	0.105	0.152	0.029	0.08
39	3.25	1.10	0.105	0.152	0.029	0.08
40	3.33	1.10	0.105	0.152	0.029	0.08
41	3.42	1.20	0.115	0.152	0.032	0.08
42	3.50	1.30	0.124	0.152	0.034	0.09
43	3.58	1.40	0.134	0.152	0.037	0.10
44	3.67	1.40	0.134	0.152	0.037	0.10
45	3.75	1.50	0.144	0.152	0.040	0.10
46	3.83	1.50	0.144	0.152	0.040	0.10
47	3.92	1.60	0.153	0.152	---	0.00
48	4.00	1.60	0.153	0.152	---	0.00
49	4.08	1.70	0.163	0.152	---	0.01
50	4.17	1.80	0.172	0.152	---	0.02
51	4.25	1.90	0.182	0.152	---	0.03
52	4.33	2.00	0.191	0.152	---	0.04
53	4.42	2.10	0.201	0.152	---	0.05
54	4.50	2.10	0.201	0.152	---	0.05
55	4.58	2.20	0.210	0.152	---	0.06
56	4.67	2.30	0.220	0.152	---	0.07
57	4.75	2.40	0.230	0.152	---	0.08
58	4.83	2.40	0.230	0.152	---	0.08
59	4.92	2.50	0.239	0.152	---	0.09
60	5.00	2.60	0.249	0.152	---	0.10
61	5.08	3.10	0.297	0.152	---	0.14
62	5.17	3.60	0.344	0.152	---	0.19
63	5.25	3.90	0.373	0.152	---	0.22
64	5.33	4.20	0.402	0.152	---	0.25
65	5.42	4.70	0.450	0.152	---	0.30
66	5.50	5.60	0.536	0.152	---	0.38
67	5.58	1.90	0.182	0.152	---	0.03
68	5.67	0.90	0.086	0.152	0.024	0.06
69	5.75	0.60	0.057	0.152	0.016	0.04
70	5.83	0.50	0.048	0.152	0.013	0.03
71	5.92	0.30	0.029	0.152	0.008	0.02
72	6.00	0.20	0.019	0.152	0.005	0.01
Sum =		100.0			Sum =	5.2

```
Flood volume = Effective rainfall      0.43(In)
 times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
Total soil loss =      0.36(In)
Total soil loss =     0.031(Ac.Ft)
Total rainfall =      0.80(In)
Flood volume =        1593.0 Cubic Feet
```

Total soil loss = 1330.0 Cubic Feet

Storm Event 1 Effective Rainfall = 2.215(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1 0.08	0.50	0.133	0.152	0.037	0.10
2 0.17	0.60	0.159	0.152	---	0.01
3 0.25	0.60	0.159	0.152	---	0.01
4 0.33	0.60	0.159	0.152	---	0.01
5 0.42	0.60	0.159	0.152	---	0.01
6 0.50	0.70	0.186	0.152	---	0.03
7 0.58	0.70	0.186	0.152	---	0.03
8 0.67	0.70	0.186	0.152	---	0.03
9 0.75	0.70	0.186	0.152	---	0.03
10 0.83	0.70	0.186	0.152	---	0.03
11 0.92	0.70	0.186	0.152	---	0.03
12 1.00	0.80	0.213	0.152	---	0.06
13 1.08	0.80	0.213	0.152	---	0.06
14 1.17	0.80	0.213	0.152	---	0.06
15 1.25	0.80	0.213	0.152	---	0.06
16 1.33	0.80	0.213	0.152	---	0.06
17 1.42	0.80	0.213	0.152	---	0.06
18 1.50	0.80	0.213	0.152	---	0.06
19 1.58	0.80	0.213	0.152	---	0.06
20 1.67	0.80	0.213	0.152	---	0.06
21 1.75	0.80	0.213	0.152	---	0.06
22 1.83	0.80	0.213	0.152	---	0.06
23 1.92	0.80	0.213	0.152	---	0.06
24 2.00	0.90	0.239	0.152	---	0.09
25 2.08	0.80	0.213	0.152	---	0.06
26 2.17	0.90	0.239	0.152	---	0.09
27 2.25	0.90	0.239	0.152	---	0.09
28 2.33	0.90	0.239	0.152	---	0.09
29 2.42	0.90	0.239	0.152	---	0.09
30 2.50	0.90	0.239	0.152	---	0.09
31 2.58	0.90	0.239	0.152	---	0.09
32 2.67	0.90	0.239	0.152	---	0.09
33 2.75	1.00	0.266	0.152	---	0.11
34 2.83	1.00	0.266	0.152	---	0.11
35 2.92	1.00	0.266	0.152	---	0.11
36 3.00	1.00	0.266	0.152	---	0.11
37 3.08	1.00	0.266	0.152	---	0.11
38 3.17	1.10	0.292	0.152	---	0.14
39 3.25	1.10	0.292	0.152	---	0.14
40 3.33	1.10	0.292	0.152	---	0.14
41 3.42	1.20	0.319	0.152	---	0.17
42 3.50	1.30	0.345	0.152	---	0.19
43 3.58	1.40	0.372	0.152	---	0.22
44 3.67	1.40	0.372	0.152	---	0.22
45 3.75	1.50	0.399	0.152	---	0.25
46 3.83	1.50	0.399	0.152	---	0.25
47 3.92	1.60	0.425	0.152	---	0.27
48 4.00	1.60	0.425	0.152	---	0.27
49 4.08	1.70	0.452	0.152	---	0.30
50 4.17	1.80	0.478	0.152	---	0.33
51 4.25	1.90	0.505	0.152	---	0.35
52 4.33	2.00	0.531	0.152	---	0.38
53 4.42	2.10	0.558	0.152	---	0.41
54 4.50	2.10	0.558	0.152	---	0.41
55 4.58	2.20	0.585	0.152	---	0.43
56 4.67	2.30	0.611	0.152	---	0.46
57 4.75	2.40	0.638	0.152	---	0.49
58 4.83	2.40	0.638	0.152	---	0.49
59 4.92	2.50	0.664	0.152	---	0.51
60 5.00	2.60	0.691	0.152	---	0.54
61 5.08	3.10	0.824	0.152	---	0.67
62 5.17	3.60	0.957	0.152	---	0.80
63 5.25	3.90	1.036	0.152	---	0.88
64 5.33	4.20	1.116	0.152	---	0.96

```
65   5.42     4.70      1.249         0.152      ---          1.10
66   5.50     5.60      1.488         0.152      ---          1.34
67   5.58     1.90      0.505         0.152      ---          0.35
68   5.67     0.90      0.239         0.152      ---          0.09
69   5.75     0.60      0.159         0.152      ---          0.01
70   5.83     0.50      0.133         0.152     0.037         0.10
71   5.92     0.30      0.080         0.152     0.022         0.06
72   6.00     0.20      0.053         0.152     0.015         0.04
   Sum =     100.0                                    Sum =    16.1
      Flood volume = Effective rainfall      1.34(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      0.87(In)
      Total soil loss =     0.073(Ac.Ft)
      Total rainfall =      2.21(In)
      Flood volume =        4923.3 Cubic Feet
      Total soil loss =        3196.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      1.257(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       6 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q         |         |         |         |
  0+10       0.0002      0.02  Q         |         |         |         |
  0+15       0.0003      0.02  Q         |         |         |         |
  0+20       0.0004      0.02  Q         |         |         |         |
  0+25       0.0005      0.02  Q         |         |         |         |
  0+30       0.0007      0.02  Q         |         |         |         |
  0+35       0.0008      0.02  Q         |         |         |         |
  0+40       0.0009      0.02  Q         |         |         |         |
  0+45       0.0011      0.02  Q         |         |         |         |
  0+50       0.0012      0.02  Q         |         |         |         |
  0+55       0.0014      0.02  Q         |         |         |         |
  1+ 0       0.0015      0.02  Q         |         |         |         |
  1+ 5       0.0017      0.02  Q         |         |         |         |
  1+10       0.0019      0.02  Q         |         |         |         |
  1+15       0.0020      0.02  Q         |         |         |         |
  1+20       0.0022      0.02  Q         |         |         |         |
  1+25       0.0023      0.02  Q         |         |         |         |
  1+30       0.0025      0.02  Q         |         |         |         |
  1+35       0.0027      0.02  Q         |         |         |         |
  1+40       0.0028      0.02  Q         |         |         |         |
  1+45       0.0030      0.02  Q         |         |         |         |
  1+50       0.0031      0.02  Q         |         |         |         |
  1+55       0.0033      0.02  Q         |         |         |         |
  2+ 0       0.0035      0.03  Q         |         |         |         |
  2+ 5       0.0037      0.02  Q         |         |         |         |
  2+10       0.0038      0.03  Q         |         |         |         |
  2+15       0.0040      0.03  Q         |         |         |         |
  2+20       0.0042      0.03  Q         |         |         |         |
  2+25       0.0044      0.03  Q         |         |         |         |
  2+30       0.0046      0.03  Q         |         |         |         |
  2+35       0.0047      0.03  QV        |         |         |         |
  2+40       0.0049      0.03  QV        |         |         |         |
  2+45       0.0051      0.03  QV        |         |         |         |
  2+50       0.0053      0.03  QV        |         |         |         |
  2+55       0.0055      0.03  QV        |         |         |         |
  3+ 0       0.0057      0.03  QV        |         |         |         |
  3+ 5       0.0059      0.03  QV        |         |         |         |
  3+10       0.0061      0.03  QV        |         |         |         |
  3+15       0.0064      0.03  QV        |         |         |         |
  3+20       0.0066      0.03  QV        |         |         |         |
  3+25       0.0068      0.03  QV        |         |         |         |
  3+30       0.0071      0.04  QV        |         |         |         |
  3+35       0.0073      0.04  QV        |         |         |         |
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3+40       0.0076      0.04  QV        |          |          |          |
3+45       0.0079      0.04  QV        |          |          |          |
3+50       0.0082      0.04  QV        |          |          |          |
3+55       0.0085      0.05  QV        |          |          |          |
4+ 0       0.0089      0.05  QV        |          |          |          |
4+ 5       0.0092      0.05  QV        |          |          |          |
4+10       0.0096      0.05  Q V       |          |          |          |
4+15       0.0099      0.05  Q V       |          |          |          |
4+20       0.0103      0.06  Q V       |          |          |          |
4+25       0.0107      0.06  Q V       |          |          |          |
4+30       0.0112      0.06  Q V       |          |          |          |
4+35       0.0116      0.06  Q V       |          |          |          |
4+40       0.0121      0.07  Q V       |          |          |          |
4+45       0.0125      0.07  Q V       |          |          |          |
4+50       0.0130      0.07  Q V       |          |          |          |
4+55       0.0135      0.07  Q V       |          |          |          |
5+ 0       0.0140      0.08  Q V       |          |          |          |
5+ 5       0.0146      0.09  Q  V      |          |          |          |
5+10       0.0153      0.10  Q  V      |          |          |          |
5+15       0.0156      0.04  Q  V      |          |          |          |
5+20       0.0157      0.02  Q  V      |          |          |          |
5+25       0.0159      0.03  Q  V      |          |          |          |
5+30       0.0163      0.06  Q  V      |          |          |          |
5+35       0.0167      0.06  Q  V      |          |          |          |
5+40       0.0170      0.04  Q  V      |          |          |          |
5+45       0.0171      0.02  Q  V      |          |          |          |
5+50       0.0172      0.02  Q  V      |          |          |          |
5+55       0.0173      0.01  Q  V      |          |          |          |
6+ 0       0.0174      0.01  Q  V      |          |          |          |
6+ 5       0.0174      0.01  Q  V      |          |          |          |
6+10       0.0176      0.02  Q  V      |          |          |          |
6+15       0.0177      0.02  Q  V      |          |          |          |
6+20       0.0179      0.02  Q  V      |          |          |          |
6+25       0.0180      0.02  Q  V      |          |          |          |
6+30       0.0182      0.02  Q  V      |          |          |          |
6+35       0.0184      0.03  Q  V      |          |          |          |
6+40       0.0186      0.03  Q  V      |          |          |          |
6+45       0.0188      0.03  Q  V      |          |          |          |
6+50       0.0189      0.03  Q   V     |          |          |          |
6+55       0.0191      0.03  Q   V     |          |          |          |
7+ 0       0.0193      0.03  Q   V     |          |          |          |
7+ 5       0.0195      0.03  Q   V     |          |          |          |
7+10       0.0197      0.03  Q   V     |          |          |          |
7+15       0.0199      0.03  Q   V     |          |          |          |
7+20       0.0201      0.03  Q   V     |          |          |          |
7+25       0.0203      0.03  Q   V     |          |          |          |
7+30       0.0205      0.03  Q   V     |          |          |          |
7+35       0.0207      0.03  Q   V     |          |          |          |
7+40       0.0209      0.03  Q   V     |          |          |          |
7+45       0.0212      0.03  Q   V     |          |          |          |
7+50       0.0214      0.03  Q   V     |          |          |          |
7+55       0.0216      0.03  Q   V     |          |          |          |
8+ 0       0.0218      0.03  Q   V     |          |          |          |
8+ 5       0.0220      0.03  Q   V     |          |          |          |
8+10       0.0222      0.03  Q   V     |          |          |          |
8+15       0.0224      0.03  Q   V     |          |          |          |
8+20       0.0227      0.03  Q   V     |          |          |          |
8+25       0.0229      0.03  Q   V     |          |          |          |
8+30       0.0231      0.03  Q   V     |          |          |          |
8+35       0.0234      0.03  Q   V     |          |          |          |
8+40       0.0236      0.03  Q    V    |          |          |          |
8+45       0.0238      0.04  Q    V    |          |          |          |
8+50       0.0241      0.04  Q    V    |          |          |          |
8+55       0.0244      0.04  Q    V    |          |          |          |
9+ 0       0.0246      0.04  Q    V    |          |          |          |
9+ 5       0.0249      0.04  Q    V    |          |          |          |
9+10       0.0251      0.04  Q    V    |          |          |          |
9+15       0.0254      0.04  Q    V    |          |          |          |
9+20       0.0257      0.04  Q    V    |          |          |          |
9+25       0.0260      0.04  Q    V    |          |          |          |
9+30       0.0263      0.05  Q    V    |          |          |          |
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 9+35       0.0267      0.05  Q    V    |          |          |          |
 9+40       0.0270      0.05  Q    V    |          |          |          |
 9+45       0.0274      0.05  Q    V    |          |          |          |
 9+50       0.0278      0.06  Q    V    |          |          |          |
 9+55       0.0282      0.06  Q    V    |          |          |          |
10+ 0       0.0286      0.06  Q     V   |          |          |          |
10+ 5       0.0290      0.06  Q     V   |          |          |          |
10+10       0.0295      0.07  Q     V   |          |          |          |
10+15       0.0300      0.07  Q     V   |          |          |          |
10+20       0.0305      0.07  Q     V   |          |          |          |
10+25       0.0310      0.08  Q     V   |          |          |          |
10+30       0.0315      0.08  Q     V   |          |          |          |
10+35       0.0321      0.08  Q     V   |          |          |          |
10+40       0.0326      0.08  Q     V   |          |          |          |
10+45       0.0333      0.09  Q      V  |          |          |          |
10+50       0.0339      0.09  Q      V  |          |          |          |
10+55       0.0345      0.09  Q      V  |          |          |          |
11+ 0       0.0352      0.10  Q      V  |          |          |          |
11+ 5       0.0354      0.04  Q      V  |          |          |          |
11+10       0.0356      0.02  Q      V  |          |          |          |
11+15       0.0359      0.04  Q      V  |          |          |          |
11+20       0.0362      0.05  Q      V  |          |          |          |
11+25       0.0368      0.08  Q      V  |          |          |          |
11+30       0.0375      0.11  Q      V  |          |          |          |
11+35       0.0382      0.09  Q       V |          |          |          |
11+40       0.0385      0.05  Q       V |          |          |          |
11+45       0.0387      0.03  Q       V |          |          |          |
11+50       0.0389      0.02  Q       V |          |          |          |
11+55       0.0390      0.01  Q       V |          |          |          |
12+ 0       0.0390      0.01  Q       V |          |          |          |
12+ 5       0.0392      0.02  Q       V |          |          |          |
12+10       0.0394      0.04  Q       V |          |          |          |
12+15       0.0397      0.04  Q       V |          |          |          |
12+20       0.0400      0.04  Q       V |          |          |          |
12+25       0.0403      0.04  Q       V |          |          |          |
12+30       0.0406      0.05  Q       V |          |          |          |
12+35       0.0410      0.05  Q       V |          |          |          |
12+40       0.0413      0.05  Q       V |          |          |          |
12+45       0.0417      0.05  Q       V |          |          |          |
12+50       0.0420      0.05  Q       V |          |          |          |
12+55       0.0423      0.05  Q       V |          |          |          |
13+ 0       0.0427      0.05  Q        V|          |          |          |
13+ 5       0.0431      0.06  Q        V|          |          |          |
13+10       0.0435      0.06  Q        V|          |          |          |
13+15       0.0439      0.06  Q        V|          |          |          |
13+20       0.0443      0.06  Q        V|          |          |          |
13+25       0.0446      0.06  Q        V|          |          |          |
13+30       0.0450      0.06  Q        V|          |          |          |
13+35       0.0454      0.06  Q        V|          |          |          |
13+40       0.0458      0.06  Q        V|          |          |          |
13+45       0.0462      0.06  Q        V|          |          |          |
13+50       0.0466      0.06  Q        V|          |          |          |
13+55       0.0470      0.06  Q        V|          |          |          |
14+ 0       0.0474      0.06  Q         V          |          |          |
14+ 5       0.0478      0.06  Q         V          |          |          |
14+10       0.0482      0.06  Q         V          |          |          |
14+15       0.0487      0.06  Q         V          |          |          |
14+20       0.0491      0.06  Q         V          |          |          |
14+25       0.0495      0.06  Q         V          |          |          |
14+30       0.0500      0.06  Q         V          |          |          |
14+35       0.0504      0.06  Q         V          |          |          |
14+40       0.0508      0.06  Q         V          |          |          |
14+45       0.0513      0.07  Q         V          |          |          |
14+50       0.0518      0.07  Q         V          |          |          |
14+55       0.0523      0.07  Q         |V         |          |          |
15+ 0       0.0528      0.07  Q         |V         |          |          |
15+ 5       0.0532      0.07  Q         |V         |          |          |
15+10       0.0538      0.07  Q         |V         |          |          |
15+15       0.0543      0.08  Q         |V         |          |          |
15+20       0.0548      0.08  Q         |V         |          |          |
15+25       0.0554      0.08  Q         |V         |          |          |
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15+30       0.0560      0.09  Q          |V        |         |         |
15+35       0.0567      0.10  Q          | V       |         |         |
15+40       0.0573      0.10  Q          | V       |         |         |
15+45       0.0580      0.10  Q          | V       |         |         |
15+50       0.0588      0.11  Q          | V       |         |         |
15+55       0.0591      0.04  Q          | V       |         |         |
16+ 0       0.0591      0.01  Q          | V       |         |         |
16+ 5       0.0592      0.01  Q          | V       |         |         |
16+10       0.0593      0.02  Q          | V       |         |         |
16+15       0.0594      0.03  Q          | V       |         |         |
16+20       0.0597      0.04  Q          | V       |         |         |
16+25       0.0600      0.05  Q          | V       |         |         |
16+30       0.0603      0.05  Q          | V       |         |         |
16+35       0.0607      0.06  Q          | V       |         |         |
16+40       0.0612      0.06  Q          | V       |         |         |
16+45       0.0617      0.07  Q          |  V      |         |         |
16+50       0.0622      0.08  Q          |  V      |         |         |
16+55       0.0628      0.08  Q          |  V      |         |         |
17+ 0       0.0634      0.09  Q          |  V      |         |         |
17+ 5       0.0643      0.13  Q          |  V      |         |         |
17+10       0.0655      0.17  Q          |  V      |         |         |
17+15       0.0670      0.21  Q          |   V     |         |         |
17+20       0.0686      0.24  Q          |   V     |         |         |
17+25       0.0706      0.28  |Q         |   V     |         |         |
17+30       0.0730      0.35  |Q         |    V    |         |         |
17+35       0.0742      0.17  Q          |    V    |         |         |
17+40       0.0746      0.07  Q          |    V    |         |         |
17+45       0.0750      0.05  Q          |    V    |         |         |
17+50       0.0753      0.04  Q          |    V    |         |         |
17+55       0.0754      0.03  Q          |     V   |         |         |
18+ 0       0.0756      0.02  Q          |     V   |         |         |
18+ 5       0.0760      0.06  Q          |     V   |         |         |
18+10       0.0762      0.04  Q          |     V   |         |         |
18+15       0.0763      0.01  Q          |     V   |         |         |
18+20       0.0764      0.01  Q          |     V   |         |         |
18+25       0.0764      0.01  Q          |     V   |         |         |
18+30       0.0766      0.02  Q          |     V   |         |         |
18+35       0.0768      0.03  Q          |     V   |         |         |
18+40       0.0770      0.03  Q          |     V   |         |         |
18+45       0.0773      0.03  Q          |     V   |         |         |
18+50       0.0775      0.03  Q          |     V   |         |         |
18+55       0.0778      0.03  Q          |     V   |         |         |
19+ 0       0.0781      0.05  Q          |     V   |         |         |
19+ 5       0.0785      0.06  Q          |     V   |         |         |
19+10       0.0789      0.06  Q          |     V   |         |         |
19+15       0.0794      0.06  Q          |     V   |         |         |
19+20       0.0798      0.06  Q          |     V   |         |         |
19+25       0.0802      0.06  Q          |      V  |         |         |
19+30       0.0806      0.06  Q          |      V  |         |         |
19+35       0.0811      0.06  Q          |      V  |         |         |
19+40       0.0815      0.06  Q          |      V  |         |         |
19+45       0.0819      0.06  Q          |      V  |         |         |
19+50       0.0823      0.06  Q          |      V  |         |         |
19+55       0.0828      0.06  Q          |      V  |
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       U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  05/04/20 File: BEAUMONTDEV2410.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
10 YEAR, 24 HOUR STORM
DEVELOPED CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     525.00(Ft.)
Length along longest watercourse measured to centroid =     345.00(Ft.)
Length along longest watercourse =      0.099 Mi.
Length along longest watercourse measured to centroid =      0.065 Mi.
Difference in elevation =       5.44(Ft.)
Slope along watercourse =     54.7109 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.025 Hr.
Lag time =     1.49 Min.
25% of lag time =     0.37 Min.
40% of lag time =     0.60 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.73                  2.76

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           6.52                  6.59

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    2.730(In)
Area Averaged 100-Year Rainfall =    6.520(In)

Point rain (area averaged) =    4.289(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.289(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           56.00         0.780
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	56.0	0.511	0.780	0.152	1.000	0.152
					Sum (F) =	0.152

Area averaged mean soil loss (F) (In/Hr) = 0.152
Minimum soil loss rate ((In/Hr)) = 0.076
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.276

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	335.676	60.069	0.611
2	0.167	671.352	35.248	0.359
3	0.250	1007.028	4.683	0.048
		Sum =	100.000	Sum= 1.018

Storm Event 4 Effective Rainfall = 0.643(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.005	0.270	0.001	0.00
2	0.17	0.07	0.005	0.269	0.001	0.00
3	0.25	0.07	0.005	0.268	0.001	0.00
4	0.33	0.10	0.008	0.267	0.002	0.01
5	0.42	0.10	0.008	0.266	0.002	0.01
6	0.50	0.10	0.008	0.265	0.002	0.01
7	0.58	0.10	0.008	0.264	0.002	0.01
8	0.67	0.10	0.008	0.263	0.002	0.01
9	0.75	0.10	0.008	0.262	0.002	0.01
10	0.83	0.13	0.010	0.261	0.003	0.01
11	0.92	0.13	0.010	0.259	0.003	0.01
12	1.00	0.13	0.010	0.258	0.003	0.01
13	1.08	0.10	0.008	0.257	0.002	0.01
14	1.17	0.10	0.008	0.256	0.002	0.01
15	1.25	0.10	0.008	0.255	0.002	0.01
16	1.33	0.10	0.008	0.254	0.002	0.01
17	1.42	0.10	0.008	0.253	0.002	0.01
18	1.50	0.10	0.008	0.252	0.002	0.01
19	1.58	0.10	0.008	0.251	0.002	0.01
20	1.67	0.10	0.008	0.250	0.002	0.01
21	1.75	0.10	0.008	0.249	0.002	0.01
22	1.83	0.13	0.010	0.248	0.003	0.01
23	1.92	0.13	0.010	0.247	0.003	0.01
24	2.00	0.13	0.010	0.246	0.003	0.01
25	2.08	0.13	0.010	0.245	0.003	0.01
26	2.17	0.13	0.010	0.244	0.003	0.01
27	2.25	0.13	0.010	0.243	0.003	0.01
28	2.33	0.13	0.010	0.242	0.003	0.01
29	2.42	0.13	0.010	0.241	0.003	0.01
30	2.50	0.13	0.010	0.240	0.003	0.01
31	2.58	0.17	0.013	0.239	0.004	0.01
32	2.67	0.17	0.013	0.238	0.004	0.01
33	2.75	0.17	0.013	0.237	0.004	0.01
34	2.83	0.17	0.013	0.236	0.004	0.01
35	2.92	0.17	0.013	0.236	0.004	0.01
36	3.00	0.17	0.013	0.235	0.004	0.01
37	3.08	0.17	0.013	0.234	0.004	0.01
38	3.17	0.17	0.013	0.233	0.004	0.01

39	3.25	0.17	0.013	0.232	0.004	0.01
40	3.33	0.17	0.013	0.231	0.004	0.01
41	3.42	0.17	0.013	0.230	0.004	0.01
42	3.50	0.17	0.013	0.229	0.004	0.01
43	3.58	0.17	0.013	0.228	0.004	0.01
44	3.67	0.17	0.013	0.227	0.004	0.01
45	3.75	0.17	0.013	0.226	0.004	0.01
46	3.83	0.20	0.015	0.225	0.004	0.01
47	3.92	0.20	0.015	0.224	0.004	0.01
48	4.00	0.20	0.015	0.223	0.004	0.01
49	4.08	0.20	0.015	0.222	0.004	0.01
50	4.17	0.20	0.015	0.221	0.004	0.01
51	4.25	0.20	0.015	0.220	0.004	0.01
52	4.33	0.23	0.018	0.219	0.005	0.01
53	4.42	0.23	0.018	0.218	0.005	0.01
54	4.50	0.23	0.018	0.217	0.005	0.01
55	4.58	0.23	0.018	0.216	0.005	0.01
56	4.67	0.23	0.018	0.216	0.005	0.01
57	4.75	0.23	0.018	0.215	0.005	0.01
58	4.83	0.27	0.021	0.214	0.006	0.01
59	4.92	0.27	0.021	0.213	0.006	0.01
60	5.00	0.27	0.021	0.212	0.006	0.01
61	5.08	0.20	0.015	0.211	0.004	0.01
62	5.17	0.20	0.015	0.210	0.004	0.01
63	5.25	0.20	0.015	0.209	0.004	0.01
64	5.33	0.23	0.018	0.208	0.005	0.01
65	5.42	0.23	0.018	0.207	0.005	0.01
66	5.50	0.23	0.018	0.206	0.005	0.01
67	5.58	0.27	0.021	0.205	0.006	0.01
68	5.67	0.27	0.021	0.205	0.006	0.01
69	5.75	0.27	0.021	0.204	0.006	0.01
70	5.83	0.27	0.021	0.203	0.006	0.01
71	5.92	0.27	0.021	0.202	0.006	0.01
72	6.00	0.27	0.021	0.201	0.006	0.01
73	6.08	0.30	0.023	0.200	0.006	0.02
74	6.17	0.30	0.023	0.199	0.006	0.02
75	6.25	0.30	0.023	0.198	0.006	0.02
76	6.33	0.30	0.023	0.197	0.006	0.02
77	6.42	0.30	0.023	0.196	0.006	0.02
78	6.50	0.30	0.023	0.196	0.006	0.02
79	6.58	0.33	0.026	0.195	0.007	0.02
80	6.67	0.33	0.026	0.194	0.007	0.02
81	6.75	0.33	0.026	0.193	0.007	0.02
82	6.83	0.33	0.026	0.192	0.007	0.02
83	6.92	0.33	0.026	0.191	0.007	0.02
84	7.00	0.33	0.026	0.190	0.007	0.02
85	7.08	0.33	0.026	0.190	0.007	0.02
86	7.17	0.33	0.026	0.189	0.007	0.02
87	7.25	0.33	0.026	0.188	0.007	0.02
88	7.33	0.37	0.028	0.187	0.008	0.02
89	7.42	0.37	0.028	0.186	0.008	0.02
90	7.50	0.37	0.028	0.185	0.008	0.02
91	7.58	0.40	0.031	0.184	0.009	0.02
92	7.67	0.40	0.031	0.184	0.009	0.02
93	7.75	0.40	0.031	0.183	0.009	0.02
94	7.83	0.43	0.033	0.182	0.009	0.02
95	7.92	0.43	0.033	0.181	0.009	0.02
96	8.00	0.43	0.033	0.180	0.009	0.02
97	8.08	0.50	0.039	0.179	0.011	0.03
98	8.17	0.50	0.039	0.178	0.011	0.03
99	8.25	0.50	0.039	0.178	0.011	0.03
100	8.33	0.50	0.039	0.177	0.011	0.03
101	8.42	0.50	0.039	0.176	0.011	0.03
102	8.50	0.50	0.039	0.175	0.011	0.03
103	8.58	0.53	0.041	0.174	0.011	0.03
104	8.67	0.53	0.041	0.174	0.011	0.03
105	8.75	0.53	0.041	0.173	0.011	0.03
106	8.83	0.57	0.044	0.172	0.012	0.03
107	8.92	0.57	0.044	0.171	0.012	0.03
108	9.00	0.57	0.044	0.170	0.012	0.03
109	9.08	0.63	0.049	0.169	0.013	0.04

110	9.17	0.63	0.049	0.169	0.013	0.04
111	9.25	0.63	0.049	0.168	0.013	0.04
112	9.33	0.67	0.051	0.167	0.014	0.04
113	9.42	0.67	0.051	0.166	0.014	0.04
114	9.50	0.67	0.051	0.165	0.014	0.04
115	9.58	0.70	0.054	0.165	0.015	0.04
116	9.67	0.70	0.054	0.164	0.015	0.04
117	9.75	0.70	0.054	0.163	0.015	0.04
118	9.83	0.73	0.057	0.162	0.016	0.04
119	9.92	0.73	0.057	0.162	0.016	0.04
120	10.00	0.73	0.057	0.161	0.016	0.04
121	10.08	0.50	0.039	0.160	0.011	0.03
122	10.17	0.50	0.039	0.159	0.011	0.03
123	10.25	0.50	0.039	0.158	0.011	0.03
124	10.33	0.50	0.039	0.158	0.011	0.03
125	10.42	0.50	0.039	0.157	0.011	0.03
126	10.50	0.50	0.039	0.156	0.011	0.03
127	10.58	0.67	0.051	0.155	0.014	0.04
128	10.67	0.67	0.051	0.155	0.014	0.04
129	10.75	0.67	0.051	0.154	0.014	0.04
130	10.83	0.67	0.051	0.153	0.014	0.04
131	10.92	0.67	0.051	0.152	0.014	0.04
132	11.00	0.67	0.051	0.152	0.014	0.04
133	11.08	0.63	0.049	0.151	0.013	0.04
134	11.17	0.63	0.049	0.150	0.013	0.04
135	11.25	0.63	0.049	0.149	0.013	0.04
136	11.33	0.63	0.049	0.149	0.013	0.04
137	11.42	0.63	0.049	0.148	0.013	0.04
138	11.50	0.63	0.049	0.147	0.013	0.04
139	11.58	0.57	0.044	0.146	0.012	0.03
140	11.67	0.57	0.044	0.146	0.012	0.03
141	11.75	0.57	0.044	0.145	0.012	0.03
142	11.83	0.60	0.046	0.144	0.013	0.03
143	11.92	0.60	0.046	0.144	0.013	0.03
144	12.00	0.60	0.046	0.143	0.013	0.03
145	12.08	0.83	0.064	0.142	0.018	0.05
146	12.17	0.83	0.064	0.141	0.018	0.05
147	12.25	0.83	0.064	0.141	0.018	0.05
148	12.33	0.87	0.067	0.140	0.018	0.05
149	12.42	0.87	0.067	0.139	0.018	0.05
150	12.50	0.87	0.067	0.139	0.018	0.05
151	12.58	0.93	0.072	0.138	0.020	0.05
152	12.67	0.93	0.072	0.137	0.020	0.05
153	12.75	0.93	0.072	0.136	0.020	0.05
154	12.83	0.97	0.075	0.136	0.021	0.05
155	12.92	0.97	0.075	0.135	0.021	0.05
156	13.00	0.97	0.075	0.134	0.021	0.05
157	13.08	1.13	0.088	0.134	0.024	0.06
158	13.17	1.13	0.088	0.133	0.024	0.06
159	13.25	1.13	0.088	0.132	0.024	0.06
160	13.33	1.13	0.088	0.132	0.024	0.06
161	13.42	1.13	0.088	0.131	0.024	0.06
162	13.50	1.13	0.088	0.130	0.024	0.06
163	13.58	0.77	0.059	0.130	0.016	0.04
164	13.67	0.77	0.059	0.129	0.016	0.04
165	13.75	0.77	0.059	0.128	0.016	0.04
166	13.83	0.77	0.059	0.128	0.016	0.04
167	13.92	0.77	0.059	0.127	0.016	0.04
168	14.00	0.77	0.059	0.126	0.016	0.04
169	14.08	0.90	0.069	0.126	0.019	0.05
170	14.17	0.90	0.069	0.125	0.019	0.05
171	14.25	0.90	0.069	0.125	0.019	0.05
172	14.33	0.87	0.067	0.124	0.018	0.05
173	14.42	0.87	0.067	0.123	0.018	0.05
174	14.50	0.87	0.067	0.123	0.018	0.05
175	14.58	0.87	0.067	0.122	0.018	0.05
176	14.67	0.87	0.067	0.121	0.018	0.05
177	14.75	0.87	0.067	0.121	0.018	0.05
178	14.83	0.83	0.064	0.120	0.018	0.05
179	14.92	0.83	0.064	0.120	0.018	0.05
180	15.00	0.83	0.064	0.119	0.018	0.05

181	15.08	0.80	0.062	0.118	0.017	0.04
182	15.17	0.80	0.062	0.118	0.017	0.04
183	15.25	0.80	0.062	0.117	0.017	0.04
184	15.33	0.77	0.059	0.116	0.016	0.04
185	15.42	0.77	0.059	0.116	0.016	0.04
186	15.50	0.77	0.059	0.115	0.016	0.04
187	15.58	0.63	0.049	0.115	0.013	0.04
188	15.67	0.63	0.049	0.114	0.013	0.04
189	15.75	0.63	0.049	0.114	0.013	0.04
190	15.83	0.63	0.049	0.113	0.013	0.04
191	15.92	0.63	0.049	0.112	0.013	0.04
192	16.00	0.63	0.049	0.112	0.013	0.04
193	16.08	0.13	0.010	0.111	0.003	0.01
194	16.17	0.13	0.010	0.111	0.003	0.01
195	16.25	0.13	0.010	0.110	0.003	0.01
196	16.33	0.13	0.010	0.110	0.003	0.01
197	16.42	0.13	0.010	0.109	0.003	0.01
198	16.50	0.13	0.010	0.108	0.003	0.01
199	16.58	0.10	0.008	0.108	0.002	0.01
200	16.67	0.10	0.008	0.107	0.002	0.01
201	16.75	0.10	0.008	0.107	0.002	0.01
202	16.83	0.10	0.008	0.106	0.002	0.01
203	16.92	0.10	0.008	0.106	0.002	0.01
204	17.00	0.10	0.008	0.105	0.002	0.01
205	17.08	0.17	0.013	0.105	0.004	0.01
206	17.17	0.17	0.013	0.104	0.004	0.01
207	17.25	0.17	0.013	0.104	0.004	0.01
208	17.33	0.17	0.013	0.103	0.004	0.01
209	17.42	0.17	0.013	0.103	0.004	0.01
210	17.50	0.17	0.013	0.102	0.004	0.01
211	17.58	0.17	0.013	0.102	0.004	0.01
212	17.67	0.17	0.013	0.101	0.004	0.01
213	17.75	0.17	0.013	0.100	0.004	0.01
214	17.83	0.13	0.010	0.100	0.003	0.01
215	17.92	0.13	0.010	0.100	0.003	0.01
216	18.00	0.13	0.010	0.099	0.003	0.01
217	18.08	0.13	0.010	0.099	0.003	0.01
218	18.17	0.13	0.010	0.098	0.003	0.01
219	18.25	0.13	0.010	0.098	0.003	0.01
220	18.33	0.13	0.010	0.097	0.003	0.01
221	18.42	0.13	0.010	0.097	0.003	0.01
222	18.50	0.13	0.010	0.096	0.003	0.01
223	18.58	0.10	0.008	0.096	0.002	0.01
224	18.67	0.10	0.008	0.095	0.002	0.01
225	18.75	0.10	0.008	0.095	0.002	0.01
226	18.83	0.07	0.005	0.094	0.001	0.00
227	18.92	0.07	0.005	0.094	0.001	0.00
228	19.00	0.07	0.005	0.093	0.001	0.00
229	19.08	0.10	0.008	0.093	0.002	0.01
230	19.17	0.10	0.008	0.093	0.002	0.01
231	19.25	0.10	0.008	0.092	0.002	0.01
232	19.33	0.13	0.010	0.092	0.003	0.01
233	19.42	0.13	0.010	0.091	0.003	0.01
234	19.50	0.13	0.010	0.091	0.003	0.01
235	19.58	0.10	0.008	0.090	0.002	0.01
236	19.67	0.10	0.008	0.090	0.002	0.01
237	19.75	0.10	0.008	0.090	0.002	0.01
238	19.83	0.07	0.005	0.089	0.001	0.00
239	19.92	0.07	0.005	0.089	0.001	0.00
240	20.00	0.07	0.005	0.088	0.001	0.00
241	20.08	0.10	0.008	0.088	0.002	0.01
242	20.17	0.10	0.008	0.088	0.002	0.01
243	20.25	0.10	0.008	0.087	0.002	0.01
244	20.33	0.10	0.008	0.087	0.002	0.01
245	20.42	0.10	0.008	0.086	0.002	0.01
246	20.50	0.10	0.008	0.086	0.002	0.01
247	20.58	0.10	0.008	0.086	0.002	0.01
248	20.67	0.10	0.008	0.085	0.002	0.01
249	20.75	0.10	0.008	0.085	0.002	0.01
250	20.83	0.07	0.005	0.085	0.001	0.00
251	20.92	0.07	0.005	0.084	0.001	0.00

252	21.00	0.07	0.005	0.084	0.001	0.00
253	21.08	0.10	0.008	0.084	0.002	0.01
254	21.17	0.10	0.008	0.083	0.002	0.01
255	21.25	0.10	0.008	0.083	0.002	0.01
256	21.33	0.07	0.005	0.083	0.001	0.00
257	21.42	0.07	0.005	0.082	0.001	0.00
258	21.50	0.07	0.005	0.082	0.001	0.00
259	21.58	0.10	0.008	0.082	0.002	0.01
260	21.67	0.10	0.008	0.081	0.002	0.01
261	21.75	0.10	0.008	0.081	0.002	0.01
262	21.83	0.07	0.005	0.081	0.001	0.00
263	21.92	0.07	0.005	0.081	0.001	0.00
264	22.00	0.07	0.005	0.080	0.001	0.00
265	22.08	0.10	0.008	0.080	0.002	0.01
266	22.17	0.10	0.008	0.080	0.002	0.01
267	22.25	0.10	0.008	0.080	0.002	0.01
268	22.33	0.07	0.005	0.079	0.001	0.00
269	22.42	0.07	0.005	0.079	0.001	0.00
270	22.50	0.07	0.005	0.079	0.001	0.00
271	22.58	0.07	0.005	0.079	0.001	0.00
272	22.67	0.07	0.005	0.078	0.001	0.00
273	22.75	0.07	0.005	0.078	0.001	0.00
274	22.83	0.07	0.005	0.078	0.001	0.00
275	22.92	0.07	0.005	0.078	0.001	0.00
276	23.00	0.07	0.005	0.078	0.001	0.00
277	23.08	0.07	0.005	0.077	0.001	0.00
278	23.17	0.07	0.005	0.077	0.001	0.00
279	23.25	0.07	0.005	0.077	0.001	0.00
280	23.33	0.07	0.005	0.077	0.001	0.00
281	23.42	0.07	0.005	0.077	0.001	0.00
282	23.50	0.07	0.005	0.077	0.001	0.00
283	23.58	0.07	0.005	0.077	0.001	0.00
284	23.67	0.07	0.005	0.076	0.001	0.00
285	23.75	0.07	0.005	0.076	0.001	0.00
286	23.83	0.07	0.005	0.076	0.001	0.00
287	23.92	0.07	0.005	0.076	0.001	0.00
288	24.00	0.07	0.005	0.076	0.001	0.00
	Sum =	100.0			Sum =	5.6

Flood volume = Effective rainfall 0.47(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.18(In)
Total soil loss = 0.015(Ac.Ft)
Total rainfall = 0.64(In)
Flood volume = 1707.8 Cubic Feet
Total soil loss = 651.0 Cubic Feet

Storm Event 3 Effective Rainfall = 0.815(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.007	0.270	0.002	0.00
2	0.17	0.07	0.007	0.269	0.002	0.00
3	0.25	0.07	0.007	0.268	0.002	0.00
4	0.33	0.10	0.010	0.267	0.003	0.01
5	0.42	0.10	0.010	0.266	0.003	0.01
6	0.50	0.10	0.010	0.265	0.003	0.01
7	0.58	0.10	0.010	0.264	0.003	0.01
8	0.67	0.10	0.010	0.263	0.003	0.01
9	0.75	0.10	0.010	0.262	0.003	0.01
10	0.83	0.13	0.013	0.261	0.004	0.01
11	0.92	0.13	0.013	0.259	0.004	0.01
12	1.00	0.13	0.013	0.258	0.004	0.01
13	1.08	0.10	0.010	0.257	0.003	0.01
14	1.17	0.10	0.010	0.256	0.003	0.01
15	1.25	0.10	0.010	0.255	0.003	0.01
16	1.33	0.10	0.010	0.254	0.003	0.01
17	1.42	0.10	0.010	0.253	0.003	0.01
18	1.50	0.10	0.010	0.252	0.003	0.01
19	1.58	0.10	0.010	0.251	0.003	0.01
20	1.67	0.10	0.010	0.250	0.003	0.01

21	1.75	0.10	0.010	0.249	0.003	0.01
22	1.83	0.13	0.013	0.248	0.004	0.01
23	1.92	0.13	0.013	0.247	0.004	0.01
24	2.00	0.13	0.013	0.246	0.004	0.01
25	2.08	0.13	0.013	0.245	0.004	0.01
26	2.17	0.13	0.013	0.244	0.004	0.01
27	2.25	0.13	0.013	0.243	0.004	0.01
28	2.33	0.13	0.013	0.242	0.004	0.01
29	2.42	0.13	0.013	0.241	0.004	0.01
30	2.50	0.13	0.013	0.240	0.004	0.01
31	2.58	0.17	0.016	0.239	0.004	0.01
32	2.67	0.17	0.016	0.238	0.004	0.01
33	2.75	0.17	0.016	0.237	0.004	0.01
34	2.83	0.17	0.016	0.236	0.004	0.01
35	2.92	0.17	0.016	0.236	0.004	0.01
36	3.00	0.17	0.016	0.235	0.004	0.01
37	3.08	0.17	0.016	0.234	0.004	0.01
38	3.17	0.17	0.016	0.233	0.004	0.01
39	3.25	0.17	0.016	0.232	0.004	0.01
40	3.33	0.17	0.016	0.231	0.004	0.01
41	3.42	0.17	0.016	0.230	0.004	0.01
42	3.50	0.17	0.016	0.229	0.004	0.01
43	3.58	0.17	0.016	0.228	0.004	0.01
44	3.67	0.17	0.016	0.227	0.004	0.01
45	3.75	0.17	0.016	0.226	0.004	0.01
46	3.83	0.20	0.020	0.225	0.005	0.01
47	3.92	0.20	0.020	0.224	0.005	0.01
48	4.00	0.20	0.020	0.223	0.005	0.01
49	4.08	0.20	0.020	0.222	0.005	0.01
50	4.17	0.20	0.020	0.221	0.005	0.01
51	4.25	0.20	0.020	0.220	0.005	0.01
52	4.33	0.23	0.023	0.219	0.006	0.02
53	4.42	0.23	0.023	0.218	0.006	0.02
54	4.50	0.23	0.023	0.217	0.006	0.02
55	4.58	0.23	0.023	0.216	0.006	0.02
56	4.67	0.23	0.023	0.216	0.006	0.02
57	4.75	0.23	0.023	0.215	0.006	0.02
58	4.83	0.27	0.026	0.214	0.007	0.02
59	4.92	0.27	0.026	0.213	0.007	0.02
60	5.00	0.27	0.026	0.212	0.007	0.02
61	5.08	0.20	0.020	0.211	0.005	0.01
62	5.17	0.20	0.020	0.210	0.005	0.01
63	5.25	0.20	0.020	0.209	0.005	0.01
64	5.33	0.23	0.023	0.208	0.006	0.02
65	5.42	0.23	0.023	0.207	0.006	0.02
66	5.50	0.23	0.023	0.206	0.006	0.02
67	5.58	0.27	0.026	0.205	0.007	0.02
68	5.67	0.27	0.026	0.205	0.007	0.02
69	5.75	0.27	0.026	0.204	0.007	0.02
70	5.83	0.27	0.026	0.203	0.007	0.02
71	5.92	0.27	0.026	0.202	0.007	0.02
72	6.00	0.27	0.026	0.201	0.007	0.02
73	6.08	0.30	0.029	0.200	0.008	0.02
74	6.17	0.30	0.029	0.199	0.008	0.02
75	6.25	0.30	0.029	0.198	0.008	0.02
76	6.33	0.30	0.029	0.197	0.008	0.02
77	6.42	0.30	0.029	0.196	0.008	0.02
78	6.50	0.30	0.029	0.196	0.008	0.02
79	6.58	0.33	0.033	0.195	0.009	0.02
80	6.67	0.33	0.033	0.194	0.009	0.02
81	6.75	0.33	0.033	0.193	0.009	0.02
82	6.83	0.33	0.033	0.192	0.009	0.02
83	6.92	0.33	0.033	0.191	0.009	0.02
84	7.00	0.33	0.033	0.190	0.009	0.02
85	7.08	0.33	0.033	0.190	0.009	0.02
86	7.17	0.33	0.033	0.189	0.009	0.02
87	7.25	0.33	0.033	0.188	0.009	0.02
88	7.33	0.37	0.036	0.187	0.010	0.03
89	7.42	0.37	0.036	0.186	0.010	0.03
90	7.50	0.37	0.036	0.185	0.010	0.03
91	7.58	0.40	0.039	0.184	0.011	0.03

92	7.67	0.40	0.039	0.184	0.011	0.03
93	7.75	0.40	0.039	0.183	0.011	0.03
94	7.83	0.43	0.042	0.182	0.012	0.03
95	7.92	0.43	0.042	0.181	0.012	0.03
96	8.00	0.43	0.042	0.180	0.012	0.03
97	8.08	0.50	0.049	0.179	0.013	0.04
98	8.17	0.50	0.049	0.178	0.013	0.04
99	8.25	0.50	0.049	0.178	0.013	0.04
100	8.33	0.50	0.049	0.177	0.013	0.04
101	8.42	0.50	0.049	0.176	0.013	0.04
102	8.50	0.50	0.049	0.175	0.013	0.04
103	8.58	0.53	0.052	0.174	0.014	0.04
104	8.67	0.53	0.052	0.174	0.014	0.04
105	8.75	0.53	0.052	0.173	0.014	0.04
106	8.83	0.57	0.055	0.172	0.015	0.04
107	8.92	0.57	0.055	0.171	0.015	0.04
108	9.00	0.57	0.055	0.170	0.015	0.04
109	9.08	0.63	0.062	0.169	0.017	0.04
110	9.17	0.63	0.062	0.169	0.017	0.04
111	9.25	0.63	0.062	0.168	0.017	0.04
112	9.33	0.67	0.065	0.167	0.018	0.05
113	9.42	0.67	0.065	0.166	0.018	0.05
114	9.50	0.67	0.065	0.165	0.018	0.05
115	9.58	0.70	0.068	0.165	0.019	0.05
116	9.67	0.70	0.068	0.164	0.019	0.05
117	9.75	0.70	0.068	0.163	0.019	0.05
118	9.83	0.73	0.072	0.162	0.020	0.05
119	9.92	0.73	0.072	0.162	0.020	0.05
120	10.00	0.73	0.072	0.161	0.020	0.05
121	10.08	0.50	0.049	0.160	0.013	0.04
122	10.17	0.50	0.049	0.159	0.013	0.04
123	10.25	0.50	0.049	0.158	0.013	0.04
124	10.33	0.50	0.049	0.158	0.013	0.04
125	10.42	0.50	0.049	0.157	0.013	0.04
126	10.50	0.50	0.049	0.156	0.013	0.04
127	10.58	0.67	0.065	0.155	0.018	0.05
128	10.67	0.67	0.065	0.155	0.018	0.05
129	10.75	0.67	0.065	0.154	0.018	0.05
130	10.83	0.67	0.065	0.153	0.018	0.05
131	10.92	0.67	0.065	0.152	0.018	0.05
132	11.00	0.67	0.065	0.152	0.018	0.05
133	11.08	0.63	0.062	0.151	0.017	0.04
134	11.17	0.63	0.062	0.150	0.017	0.04
135	11.25	0.63	0.062	0.149	0.017	0.04
136	11.33	0.63	0.062	0.149	0.017	0.04
137	11.42	0.63	0.062	0.148	0.017	0.04
138	11.50	0.63	0.062	0.147	0.017	0.04
139	11.58	0.57	0.055	0.146	0.015	0.04
140	11.67	0.57	0.055	0.146	0.015	0.04
141	11.75	0.57	0.055	0.145	0.015	0.04
142	11.83	0.60	0.059	0.144	0.016	0.04
143	11.92	0.60	0.059	0.144	0.016	0.04
144	12.00	0.60	0.059	0.143	0.016	0.04
145	12.08	0.83	0.081	0.142	0.022	0.06
146	12.17	0.83	0.081	0.141	0.022	0.06
147	12.25	0.83	0.081	0.141	0.022	0.06
148	12.33	0.87	0.085	0.140	0.023	0.06
149	12.42	0.87	0.085	0.139	0.023	0.06
150	12.50	0.87	0.085	0.139	0.023	0.06
151	12.58	0.93	0.091	0.138	0.025	0.07
152	12.67	0.93	0.091	0.137	0.025	0.07
153	12.75	0.93	0.091	0.136	0.025	0.07
154	12.83	0.97	0.095	0.136	0.026	0.07
155	12.92	0.97	0.095	0.135	0.026	0.07
156	13.00	0.97	0.095	0.134	0.026	0.07
157	13.08	1.13	0.111	0.134	0.031	0.08
158	13.17	1.13	0.111	0.133	0.031	0.08
159	13.25	1.13	0.111	0.132	0.031	0.08
160	13.33	1.13	0.111	0.132	0.031	0.08
161	13.42	1.13	0.111	0.131	0.031	0.08
162	13.50	1.13	0.111	0.130	0.031	0.08

163	13.58	0.77	0.075	0.130	0.021	0.05
164	13.67	0.77	0.075	0.129	0.021	0.05
165	13.75	0.77	0.075	0.128	0.021	0.05
166	13.83	0.77	0.075	0.128	0.021	0.05
167	13.92	0.77	0.075	0.127	0.021	0.05
168	14.00	0.77	0.075	0.126	0.021	0.05
169	14.08	0.90	0.088	0.126	0.024	0.06
170	14.17	0.90	0.088	0.125	0.024	0.06
171	14.25	0.90	0.088	0.125	0.024	0.06
172	14.33	0.87	0.085	0.124	0.023	0.06
173	14.42	0.87	0.085	0.123	0.023	0.06
174	14.50	0.87	0.085	0.123	0.023	0.06
175	14.58	0.87	0.085	0.122	0.023	0.06
176	14.67	0.87	0.085	0.121	0.023	0.06
177	14.75	0.87	0.085	0.121	0.023	0.06
178	14.83	0.83	0.081	0.120	0.022	0.06
179	14.92	0.83	0.081	0.120	0.022	0.06
180	15.00	0.83	0.081	0.119	0.022	0.06
181	15.08	0.80	0.078	0.118	0.022	0.06
182	15.17	0.80	0.078	0.118	0.022	0.06
183	15.25	0.80	0.078	0.117	0.022	0.06
184	15.33	0.77	0.075	0.116	0.021	0.05
185	15.42	0.77	0.075	0.116	0.021	0.05
186	15.50	0.77	0.075	0.115	0.021	0.05
187	15.58	0.63	0.062	0.115	0.017	0.04
188	15.67	0.63	0.062	0.114	0.017	0.04
189	15.75	0.63	0.062	0.114	0.017	0.04
190	15.83	0.63	0.062	0.113	0.017	0.04
191	15.92	0.63	0.062	0.112	0.017	0.04
192	16.00	0.63	0.062	0.112	0.017	0.04
193	16.08	0.13	0.013	0.111	0.004	0.01
194	16.17	0.13	0.013	0.111	0.004	0.01
195	16.25	0.13	0.013	0.110	0.004	0.01
196	16.33	0.13	0.013	0.110	0.004	0.01
197	16.42	0.13	0.013	0.109	0.004	0.01
198	16.50	0.13	0.013	0.108	0.004	0.01
199	16.58	0.10	0.010	0.108	0.003	0.01
200	16.67	0.10	0.010	0.107	0.003	0.01
201	16.75	0.10	0.010	0.107	0.003	0.01
202	16.83	0.10	0.010	0.106	0.003	0.01
203	16.92	0.10	0.010	0.106	0.003	0.01
204	17.00	0.10	0.010	0.105	0.003	0.01
205	17.08	0.17	0.016	0.105	0.004	0.01
206	17.17	0.17	0.016	0.104	0.004	0.01
207	17.25	0.17	0.016	0.104	0.004	0.01
208	17.33	0.17	0.016	0.103	0.004	0.01
209	17.42	0.17	0.016	0.103	0.004	0.01
210	17.50	0.17	0.016	0.102	0.004	0.01
211	17.58	0.17	0.016	0.102	0.004	0.01
212	17.67	0.17	0.016	0.101	0.004	0.01
213	17.75	0.17	0.016	0.100	0.004	0.01
214	17.83	0.13	0.013	0.100	0.004	0.01
215	17.92	0.13	0.013	0.100	0.004	0.01
216	18.00	0.13	0.013	0.099	0.004	0.01
217	18.08	0.13	0.013	0.099	0.004	0.01
218	18.17	0.13	0.013	0.098	0.004	0.01
219	18.25	0.13	0.013	0.098	0.004	0.01
220	18.33	0.13	0.013	0.097	0.004	0.01
221	18.42	0.13	0.013	0.097	0.004	0.01
222	18.50	0.13	0.013	0.096	0.004	0.01
223	18.58	0.10	0.010	0.096	0.003	0.01
224	18.67	0.10	0.010	0.095	0.003	0.01
225	18.75	0.10	0.010	0.095	0.003	0.01
226	18.83	0.07	0.007	0.094	0.002	0.00
227	18.92	0.07	0.007	0.094	0.002	0.00
228	19.00	0.07	0.007	0.093	0.002	0.00
229	19.08	0.10	0.010	0.093	0.003	0.01
230	19.17	0.10	0.010	0.093	0.003	0.01
231	19.25	0.10	0.010	0.092	0.003	0.01
232	19.33	0.13	0.013	0.092	0.004	0.01
233	19.42	0.13	0.013	0.091	0.004	0.01

234	19.50	0.13	0.013	0.091	0.004	0.01
235	19.58	0.10	0.010	0.090	0.003	0.01
236	19.67	0.10	0.010	0.090	0.003	0.01
237	19.75	0.10	0.010	0.090	0.003	0.01
238	19.83	0.07	0.007	0.089	0.002	0.00
239	19.92	0.07	0.007	0.089	0.002	0.00
240	20.00	0.07	0.007	0.088	0.002	0.00
241	20.08	0.10	0.010	0.088	0.003	0.01
242	20.17	0.10	0.010	0.088	0.003	0.01
243	20.25	0.10	0.010	0.087	0.003	0.01
244	20.33	0.10	0.010	0.087	0.003	0.01
245	20.42	0.10	0.010	0.086	0.003	0.01
246	20.50	0.10	0.010	0.086	0.003	0.01
247	20.58	0.10	0.010	0.086	0.003	0.01
248	20.67	0.10	0.010	0.085	0.003	0.01
249	20.75	0.10	0.010	0.085	0.003	0.01
250	20.83	0.07	0.007	0.085	0.002	0.00
251	20.92	0.07	0.007	0.084	0.002	0.00
252	21.00	0.07	0.007	0.084	0.002	0.00
253	21.08	0.10	0.010	0.084	0.003	0.01
254	21.17	0.10	0.010	0.083	0.003	0.01
255	21.25	0.10	0.010	0.083	0.003	0.01
256	21.33	0.07	0.007	0.083	0.002	0.00
257	21.42	0.07	0.007	0.082	0.002	0.00
258	21.50	0.07	0.007	0.082	0.002	0.00
259	21.58	0.10	0.010	0.082	0.003	0.01
260	21.67	0.10	0.010	0.081	0.003	0.01
261	21.75	0.10	0.010	0.081	0.003	0.01
262	21.83	0.07	0.007	0.081	0.002	0.00
263	21.92	0.07	0.007	0.081	0.002	0.00
264	22.00	0.07	0.007	0.080	0.002	0.00
265	22.08	0.10	0.010	0.080	0.003	0.01
266	22.17	0.10	0.010	0.080	0.003	0.01
267	22.25	0.10	0.010	0.080	0.003	0.01
268	22.33	0.07	0.007	0.079	0.002	0.00
269	22.42	0.07	0.007	0.079	0.002	0.00
270	22.50	0.07	0.007	0.079	0.002	0.00
271	22.58	0.07	0.007	0.079	0.002	0.00
272	22.67	0.07	0.007	0.078	0.002	0.00
273	22.75	0.07	0.007	0.078	0.002	0.00
274	22.83	0.07	0.007	0.078	0.002	0.00
275	22.92	0.07	0.007	0.078	0.002	0.00
276	23.00	0.07	0.007	0.078	0.002	0.00
277	23.08	0.07	0.007	0.077	0.002	0.00
278	23.17	0.07	0.007	0.077	0.002	0.00
279	23.25	0.07	0.007	0.077	0.002	0.00
280	23.33	0.07	0.007	0.077	0.002	0.00
281	23.42	0.07	0.007	0.077	0.002	0.00
282	23.50	0.07	0.007	0.077	0.002	0.00
283	23.58	0.07	0.007	0.077	0.002	0.00
284	23.67	0.07	0.007	0.076	0.002	0.00
285	23.75	0.07	0.007	0.076	0.002	0.00
286	23.83	0.07	0.007	0.076	0.002	0.00
287	23.92	0.07	0.007	0.076	0.002	0.00
288	24.00	0.07	0.007	0.076	0.002	0.00
	Sum =	100.0			Sum =	7.1

Flood volume = Effective rainfall 0.59(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.22(In)
Total soil loss = 0.019(Ac.Ft)
Total rainfall = 0.81(In)
Flood volume = 2163.2 Cubic Feet
Total soil loss = 824.7 Cubic Feet

Storm Event 2 Effective Rainfall = 1.544(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.012	0.270	0.003	0.01
2	0.17	0.07	0.012	0.269	0.003	0.01

3	0.25	0.07	0.012	0.268	0.003	0.01
4	0.33	0.10	0.019	0.267	0.005	0.01
5	0.42	0.10	0.019	0.266	0.005	0.01
6	0.50	0.10	0.019	0.265	0.005	0.01
7	0.58	0.10	0.019	0.264	0.005	0.01
8	0.67	0.10	0.019	0.263	0.005	0.01
9	0.75	0.10	0.019	0.262	0.005	0.01
10	0.83	0.13	0.025	0.261	0.007	0.02
11	0.92	0.13	0.025	0.259	0.007	0.02
12	1.00	0.13	0.025	0.258	0.007	0.02
13	1.08	0.10	0.019	0.257	0.005	0.01
14	1.17	0.10	0.019	0.256	0.005	0.01
15	1.25	0.10	0.019	0.255	0.005	0.01
16	1.33	0.10	0.019	0.254	0.005	0.01
17	1.42	0.10	0.019	0.253	0.005	0.01
18	1.50	0.10	0.019	0.252	0.005	0.01
19	1.58	0.10	0.019	0.251	0.005	0.01
20	1.67	0.10	0.019	0.250	0.005	0.01
21	1.75	0.10	0.019	0.249	0.005	0.01
22	1.83	0.13	0.025	0.248	0.007	0.02
23	1.92	0.13	0.025	0.247	0.007	0.02
24	2.00	0.13	0.025	0.246	0.007	0.02
25	2.08	0.13	0.025	0.245	0.007	0.02
26	2.17	0.13	0.025	0.244	0.007	0.02
27	2.25	0.13	0.025	0.243	0.007	0.02
28	2.33	0.13	0.025	0.242	0.007	0.02
29	2.42	0.13	0.025	0.241	0.007	0.02
30	2.50	0.13	0.025	0.240	0.007	0.02
31	2.58	0.17	0.031	0.239	0.009	0.02
32	2.67	0.17	0.031	0.238	0.009	0.02
33	2.75	0.17	0.031	0.237	0.009	0.02
34	2.83	0.17	0.031	0.236	0.009	0.02
35	2.92	0.17	0.031	0.236	0.009	0.02
36	3.00	0.17	0.031	0.235	0.009	0.02
37	3.08	0.17	0.031	0.234	0.009	0.02
38	3.17	0.17	0.031	0.233	0.009	0.02
39	3.25	0.17	0.031	0.232	0.009	0.02
40	3.33	0.17	0.031	0.231	0.009	0.02
41	3.42	0.17	0.031	0.230	0.009	0.02
42	3.50	0.17	0.031	0.229	0.009	0.02
43	3.58	0.17	0.031	0.228	0.009	0.02
44	3.67	0.17	0.031	0.227	0.009	0.02
45	3.75	0.17	0.031	0.226	0.009	0.02
46	3.83	0.20	0.037	0.225	0.010	0.03
47	3.92	0.20	0.037	0.224	0.010	0.03
48	4.00	0.20	0.037	0.223	0.010	0.03
49	4.08	0.20	0.037	0.222	0.010	0.03
50	4.17	0.20	0.037	0.221	0.010	0.03
51	4.25	0.20	0.037	0.220	0.010	0.03
52	4.33	0.23	0.043	0.219	0.012	0.03
53	4.42	0.23	0.043	0.218	0.012	0.03
54	4.50	0.23	0.043	0.217	0.012	0.03
55	4.58	0.23	0.043	0.216	0.012	0.03
56	4.67	0.23	0.043	0.216	0.012	0.03
57	4.75	0.23	0.043	0.215	0.012	0.03
58	4.83	0.27	0.049	0.214	0.014	0.04
59	4.92	0.27	0.049	0.213	0.014	0.04
60	5.00	0.27	0.049	0.212	0.014	0.04
61	5.08	0.20	0.037	0.211	0.010	0.03
62	5.17	0.20	0.037	0.210	0.010	0.03
63	5.25	0.20	0.037	0.209	0.010	0.03
64	5.33	0.23	0.043	0.208	0.012	0.03
65	5.42	0.23	0.043	0.207	0.012	0.03
66	5.50	0.23	0.043	0.206	0.012	0.03
67	5.58	0.27	0.049	0.205	0.014	0.04
68	5.67	0.27	0.049	0.205	0.014	0.04
69	5.75	0.27	0.049	0.204	0.014	0.04
70	5.83	0.27	0.049	0.203	0.014	0.04
71	5.92	0.27	0.049	0.202	0.014	0.04
72	6.00	0.27	0.049	0.201	0.014	0.04
73	6.08	0.30	0.056	0.200	0.015	0.04

74	6.17	0.30	0.056	0.199	0.015	0.04
75	6.25	0.30	0.056	0.198	0.015	0.04
76	6.33	0.30	0.056	0.197	0.015	0.04
77	6.42	0.30	0.056	0.196	0.015	0.04
78	6.50	0.30	0.056	0.196	0.015	0.04
79	6.58	0.33	0.062	0.195	0.017	0.04
80	6.67	0.33	0.062	0.194	0.017	0.04
81	6.75	0.33	0.062	0.193	0.017	0.04
82	6.83	0.33	0.062	0.192	0.017	0.04
83	6.92	0.33	0.062	0.191	0.017	0.04
84	7.00	0.33	0.062	0.190	0.017	0.04
85	7.08	0.33	0.062	0.190	0.017	0.04
86	7.17	0.33	0.062	0.189	0.017	0.04
87	7.25	0.33	0.062	0.188	0.017	0.04
88	7.33	0.37	0.068	0.187	0.019	0.05
89	7.42	0.37	0.068	0.186	0.019	0.05
90	7.50	0.37	0.068	0.185	0.019	0.05
91	7.58	0.40	0.074	0.184	0.020	0.05
92	7.67	0.40	0.074	0.184	0.020	0.05
93	7.75	0.40	0.074	0.183	0.020	0.05
94	7.83	0.43	0.080	0.182	0.022	0.06
95	7.92	0.43	0.080	0.181	0.022	0.06
96	8.00	0.43	0.080	0.180	0.022	0.06
97	8.08	0.50	0.093	0.179	0.026	0.07
98	8.17	0.50	0.093	0.178	0.026	0.07
99	8.25	0.50	0.093	0.178	0.026	0.07
100	8.33	0.50	0.093	0.177	0.026	0.07
101	8.42	0.50	0.093	0.176	0.026	0.07
102	8.50	0.50	0.093	0.175	0.026	0.07
103	8.58	0.53	0.099	0.174	0.027	0.07
104	8.67	0.53	0.099	0.174	0.027	0.07
105	8.75	0.53	0.099	0.173	0.027	0.07
106	8.83	0.57	0.105	0.172	0.029	0.08
107	8.92	0.57	0.105	0.171	0.029	0.08
108	9.00	0.57	0.105	0.170	0.029	0.08
109	9.08	0.63	0.117	0.169	0.032	0.08
110	9.17	0.63	0.117	0.169	0.032	0.08
111	9.25	0.63	0.117	0.168	0.032	0.08
112	9.33	0.67	0.124	0.167	0.034	0.09
113	9.42	0.67	0.124	0.166	0.034	0.09
114	9.50	0.67	0.124	0.165	0.034	0.09
115	9.58	0.70	0.130	0.165	0.036	0.09
116	9.67	0.70	0.130	0.164	0.036	0.09
117	9.75	0.70	0.130	0.163	0.036	0.09
118	9.83	0.73	0.136	0.162	0.038	0.10
119	9.92	0.73	0.136	0.162	0.038	0.10
120	10.00	0.73	0.136	0.161	0.038	0.10
121	10.08	0.50	0.093	0.160	0.026	0.07
122	10.17	0.50	0.093	0.159	0.026	0.07
123	10.25	0.50	0.093	0.158	0.026	0.07
124	10.33	0.50	0.093	0.158	0.026	0.07
125	10.42	0.50	0.093	0.157	0.026	0.07
126	10.50	0.50	0.093	0.156	0.026	0.07
127	10.58	0.67	0.124	0.155	0.034	0.09
128	10.67	0.67	0.124	0.155	0.034	0.09
129	10.75	0.67	0.124	0.154	0.034	0.09
130	10.83	0.67	0.124	0.153	0.034	0.09
131	10.92	0.67	0.124	0.152	0.034	0.09
132	11.00	0.67	0.124	0.152	0.034	0.09
133	11.08	0.63	0.117	0.151	0.032	0.08
134	11.17	0.63	0.117	0.150	0.032	0.08
135	11.25	0.63	0.117	0.149	0.032	0.08
136	11.33	0.63	0.117	0.149	0.032	0.08
137	11.42	0.63	0.117	0.148	0.032	0.08
138	11.50	0.63	0.117	0.147	0.032	0.08
139	11.58	0.57	0.105	0.146	0.029	0.08
140	11.67	0.57	0.105	0.146	0.029	0.08
141	11.75	0.57	0.105	0.145	0.029	0.08
142	11.83	0.60	0.111	0.144	0.031	0.08
143	11.92	0.60	0.111	0.144	0.031	0.08
144	12.00	0.60	0.111	0.143	0.031	0.08

145	12.08	0.83	0.154	0.142	---	0.01
146	12.17	0.83	0.154	0.141	---	0.01
147	12.25	0.83	0.154	0.141	---	0.01
148	12.33	0.87	0.161	0.140	---	0.02
149	12.42	0.87	0.161	0.139	---	0.02
150	12.50	0.87	0.161	0.139	---	0.02
151	12.58	0.93	0.173	0.138	---	0.04
152	12.67	0.93	0.173	0.137	---	0.04
153	12.75	0.93	0.173	0.136	---	0.04
154	12.83	0.97	0.179	0.136	---	0.04
155	12.92	0.97	0.179	0.135	---	0.04
156	13.00	0.97	0.179	0.134	---	0.04
157	13.08	1.13	0.210	0.134	---	0.08
158	13.17	1.13	0.210	0.133	---	0.08
159	13.25	1.13	0.210	0.132	---	0.08
160	13.33	1.13	0.210	0.132	---	0.08
161	13.42	1.13	0.210	0.131	---	0.08
162	13.50	1.13	0.210	0.130	---	0.08
163	13.58	0.77	0.142	0.130	---	0.01
164	13.67	0.77	0.142	0.129	---	0.01
165	13.75	0.77	0.142	0.128	---	0.01
166	13.83	0.77	0.142	0.128	---	0.01
167	13.92	0.77	0.142	0.127	---	0.01
168	14.00	0.77	0.142	0.126	---	0.02
169	14.08	0.90	0.167	0.126	---	0.04
170	14.17	0.90	0.167	0.125	---	0.04
171	14.25	0.90	0.167	0.125	---	0.04
172	14.33	0.87	0.161	0.124	---	0.04
173	14.42	0.87	0.161	0.123	---	0.04
174	14.50	0.87	0.161	0.123	---	0.04
175	14.58	0.87	0.161	0.122	---	0.04
176	14.67	0.87	0.161	0.121	---	0.04
177	14.75	0.87	0.161	0.121	---	0.04
178	14.83	0.83	0.154	0.120	---	0.03
179	14.92	0.83	0.154	0.120	---	0.03
180	15.00	0.83	0.154	0.119	---	0.04
181	15.08	0.80	0.148	0.118	---	0.03
182	15.17	0.80	0.148	0.118	---	0.03
183	15.25	0.80	0.148	0.117	---	0.03
184	15.33	0.77	0.142	0.116	---	0.03
185	15.42	0.77	0.142	0.116	---	0.03
186	15.50	0.77	0.142	0.115	---	0.03
187	15.58	0.63	0.117	0.115	---	0.00
188	15.67	0.63	0.117	0.114	---	0.00
189	15.75	0.63	0.117	0.114	---	0.00
190	15.83	0.63	0.117	0.113	---	0.00
191	15.92	0.63	0.117	0.112	---	0.00
192	16.00	0.63	0.117	0.112	---	0.01
193	16.08	0.13	0.025	0.111	0.007	0.02
194	16.17	0.13	0.025	0.111	0.007	0.02
195	16.25	0.13	0.025	0.110	0.007	0.02
196	16.33	0.13	0.025	0.110	0.007	0.02
197	16.42	0.13	0.025	0.109	0.007	0.02
198	16.50	0.13	0.025	0.108	0.007	0.02
199	16.58	0.10	0.019	0.108	0.005	0.01
200	16.67	0.10	0.019	0.107	0.005	0.01
201	16.75	0.10	0.019	0.107	0.005	0.01
202	16.83	0.10	0.019	0.106	0.005	0.01
203	16.92	0.10	0.019	0.106	0.005	0.01
204	17.00	0.10	0.019	0.105	0.005	0.01
205	17.08	0.17	0.031	0.105	0.009	0.02
206	17.17	0.17	0.031	0.104	0.009	0.02
207	17.25	0.17	0.031	0.104	0.009	0.02
208	17.33	0.17	0.031	0.103	0.009	0.02
209	17.42	0.17	0.031	0.103	0.009	0.02
210	17.50	0.17	0.031	0.102	0.009	0.02
211	17.58	0.17	0.031	0.102	0.009	0.02
212	17.67	0.17	0.031	0.101	0.009	0.02
213	17.75	0.17	0.031	0.100	0.009	0.02
214	17.83	0.13	0.025	0.100	0.007	0.02
215	17.92	0.13	0.025	0.100	0.007	0.02

216	18.00	0.13	0.025	0.099	0.007	0.02
217	18.08	0.13	0.025	0.099	0.007	0.02
218	18.17	0.13	0.025	0.098	0.007	0.02
219	18.25	0.13	0.025	0.098	0.007	0.02
220	18.33	0.13	0.025	0.097	0.007	0.02
221	18.42	0.13	0.025	0.097	0.007	0.02
222	18.50	0.13	0.025	0.096	0.007	0.02
223	18.58	0.10	0.019	0.096	0.005	0.01
224	18.67	0.10	0.019	0.095	0.005	0.01
225	18.75	0.10	0.019	0.095	0.005	0.01
226	18.83	0.07	0.012	0.094	0.003	0.01
227	18.92	0.07	0.012	0.094	0.003	0.01
228	19.00	0.07	0.012	0.093	0.003	0.01
229	19.08	0.10	0.019	0.093	0.005	0.01
230	19.17	0.10	0.019	0.093	0.005	0.01
231	19.25	0.10	0.019	0.092	0.005	0.01
232	19.33	0.13	0.025	0.092	0.007	0.02
233	19.42	0.13	0.025	0.091	0.007	0.02
234	19.50	0.13	0.025	0.091	0.007	0.02
235	19.58	0.10	0.019	0.090	0.005	0.01
236	19.67	0.10	0.019	0.090	0.005	0.01
237	19.75	0.10	0.019	0.090	0.005	0.01
238	19.83	0.07	0.012	0.089	0.003	0.01
239	19.92	0.07	0.012	0.089	0.003	0.01
240	20.00	0.07	0.012	0.088	0.003	0.01
241	20.08	0.10	0.019	0.088	0.005	0.01
242	20.17	0.10	0.019	0.088	0.005	0.01
243	20.25	0.10	0.019	0.087	0.005	0.01
244	20.33	0.10	0.019	0.087	0.005	0.01
245	20.42	0.10	0.019	0.086	0.005	0.01
246	20.50	0.10	0.019	0.086	0.005	0.01
247	20.58	0.10	0.019	0.086	0.005	0.01
248	20.67	0.10	0.019	0.085	0.005	0.01
249	20.75	0.10	0.019	0.085	0.005	0.01
250	20.83	0.07	0.012	0.085	0.003	0.01
251	20.92	0.07	0.012	0.084	0.003	0.01
252	21.00	0.07	0.012	0.084	0.003	0.01
253	21.08	0.10	0.019	0.084	0.005	0.01
254	21.17	0.10	0.019	0.083	0.005	0.01
255	21.25	0.10	0.019	0.083	0.005	0.01
256	21.33	0.07	0.012	0.083	0.003	0.01
257	21.42	0.07	0.012	0.082	0.003	0.01
258	21.50	0.07	0.012	0.082	0.003	0.01
259	21.58	0.10	0.019	0.082	0.005	0.01
260	21.67	0.10	0.019	0.081	0.005	0.01
261	21.75	0.10	0.019	0.081	0.005	0.01
262	21.83	0.07	0.012	0.081	0.003	0.01
263	21.92	0.07	0.012	0.081	0.003	0.01
264	22.00	0.07	0.012	0.080	0.003	0.01
265	22.08	0.10	0.019	0.080	0.005	0.01
266	22.17	0.10	0.019	0.080	0.005	0.01
267	22.25	0.10	0.019	0.080	0.005	0.01
268	22.33	0.07	0.012	0.079	0.003	0.01
269	22.42	0.07	0.012	0.079	0.003	0.01
270	22.50	0.07	0.012	0.079	0.003	0.01
271	22.58	0.07	0.012	0.079	0.003	0.01
272	22.67	0.07	0.012	0.078	0.003	0.01
273	22.75	0.07	0.012	0.078	0.003	0.01
274	22.83	0.07	0.012	0.078	0.003	0.01
275	22.92	0.07	0.012	0.078	0.003	0.01
276	23.00	0.07	0.012	0.078	0.003	0.01
277	23.08	0.07	0.012	0.077	0.003	0.01
278	23.17	0.07	0.012	0.077	0.003	0.01
279	23.25	0.07	0.012	0.077	0.003	0.01
280	23.33	0.07	0.012	0.077	0.003	0.01
281	23.42	0.07	0.012	0.077	0.003	0.01
282	23.50	0.07	0.012	0.077	0.003	0.01
283	23.58	0.07	0.012	0.077	0.003	0.01
284	23.67	0.07	0.012	0.076	0.003	0.01
285	23.75	0.07	0.012	0.076	0.003	0.01
286	23.83	0.07	0.012	0.076	0.003	0.01

287	23.92	0.07	0.012	0.076	0.003	0.01
288	24.00	0.07	0.012	0.076	0.003	0.01
	Sum =	100.0			Sum =	9.4

Flood volume = Effective rainfall 0.79(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.76(In)
Total soil loss = 0.064(Ac.Ft)
Total rainfall = 1.54(In)
Flood volume = 2887.2 Cubic Feet
Total soil loss = 2774.0 Cubic Feet

Storm Event 1 Effective Rainfall = 4.289(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.034	0.270	0.009	0.02
2	0.17	0.07	0.034	0.269	0.009	0.02
3	0.25	0.07	0.034	0.268	0.009	0.02
4	0.33	0.10	0.051	0.267	0.014	0.04
5	0.42	0.10	0.051	0.266	0.014	0.04
6	0.50	0.10	0.051	0.265	0.014	0.04
7	0.58	0.10	0.051	0.264	0.014	0.04
8	0.67	0.10	0.051	0.263	0.014	0.04
9	0.75	0.10	0.051	0.262	0.014	0.04
10	0.83	0.13	0.069	0.261	0.019	0.05
11	0.92	0.13	0.069	0.259	0.019	0.05
12	1.00	0.13	0.069	0.258	0.019	0.05
13	1.08	0.10	0.051	0.257	0.014	0.04
14	1.17	0.10	0.051	0.256	0.014	0.04
15	1.25	0.10	0.051	0.255	0.014	0.04
16	1.33	0.10	0.051	0.254	0.014	0.04
17	1.42	0.10	0.051	0.253	0.014	0.04
18	1.50	0.10	0.051	0.252	0.014	0.04
19	1.58	0.10	0.051	0.251	0.014	0.04
20	1.67	0.10	0.051	0.250	0.014	0.04
21	1.75	0.10	0.051	0.249	0.014	0.04
22	1.83	0.13	0.069	0.248	0.019	0.05
23	1.92	0.13	0.069	0.247	0.019	0.05
24	2.00	0.13	0.069	0.246	0.019	0.05
25	2.08	0.13	0.069	0.245	0.019	0.05
26	2.17	0.13	0.069	0.244	0.019	0.05
27	2.25	0.13	0.069	0.243	0.019	0.05
28	2.33	0.13	0.069	0.242	0.019	0.05
29	2.42	0.13	0.069	0.241	0.019	0.05
30	2.50	0.13	0.069	0.240	0.019	0.05
31	2.58	0.17	0.086	0.239	0.024	0.06
32	2.67	0.17	0.086	0.238	0.024	0.06
33	2.75	0.17	0.086	0.237	0.024	0.06
34	2.83	0.17	0.086	0.236	0.024	0.06
35	2.92	0.17	0.086	0.236	0.024	0.06
36	3.00	0.17	0.086	0.235	0.024	0.06
37	3.08	0.17	0.086	0.234	0.024	0.06
38	3.17	0.17	0.086	0.233	0.024	0.06
39	3.25	0.17	0.086	0.232	0.024	0.06
40	3.33	0.17	0.086	0.231	0.024	0.06
41	3.42	0.17	0.086	0.230	0.024	0.06
42	3.50	0.17	0.086	0.229	0.024	0.06
43	3.58	0.17	0.086	0.228	0.024	0.06
44	3.67	0.17	0.086	0.227	0.024	0.06
45	3.75	0.17	0.086	0.226	0.024	0.06
46	3.83	0.20	0.103	0.225	0.028	0.07
47	3.92	0.20	0.103	0.224	0.028	0.07
48	4.00	0.20	0.103	0.223	0.028	0.07
49	4.08	0.20	0.103	0.222	0.028	0.07
50	4.17	0.20	0.103	0.221	0.028	0.07
51	4.25	0.20	0.103	0.220	0.028	0.07
52	4.33	0.23	0.120	0.219	0.033	0.09
53	4.42	0.23	0.120	0.218	0.033	0.09
54	4.50	0.23	0.120	0.217	0.033	0.09
55	4.58	0.23	0.120	0.216	0.033	0.09

56	4.67	0.23	0.120	0.216	0.033	0.09
57	4.75	0.23	0.120	0.215	0.033	0.09
58	4.83	0.27	0.137	0.214	0.038	0.10
59	4.92	0.27	0.137	0.213	0.038	0.10
60	5.00	0.27	0.137	0.212	0.038	0.10
61	5.08	0.20	0.103	0.211	0.028	0.07
62	5.17	0.20	0.103	0.210	0.028	0.07
63	5.25	0.20	0.103	0.209	0.028	0.07
64	5.33	0.23	0.120	0.208	0.033	0.09
65	5.42	0.23	0.120	0.207	0.033	0.09
66	5.50	0.23	0.120	0.206	0.033	0.09
67	5.58	0.27	0.137	0.205	0.038	0.10
68	5.67	0.27	0.137	0.205	0.038	0.10
69	5.75	0.27	0.137	0.204	0.038	0.10
70	5.83	0.27	0.137	0.203	0.038	0.10
71	5.92	0.27	0.137	0.202	0.038	0.10
72	6.00	0.27	0.137	0.201	0.038	0.10
73	6.08	0.30	0.154	0.200	0.043	0.11
74	6.17	0.30	0.154	0.199	0.043	0.11
75	6.25	0.30	0.154	0.198	0.043	0.11
76	6.33	0.30	0.154	0.197	0.043	0.11
77	6.42	0.30	0.154	0.196	0.043	0.11
78	6.50	0.30	0.154	0.196	0.043	0.11
79	6.58	0.33	0.172	0.195	0.047	0.12
80	6.67	0.33	0.172	0.194	0.047	0.12
81	6.75	0.33	0.172	0.193	0.047	0.12
82	6.83	0.33	0.172	0.192	0.047	0.12
83	6.92	0.33	0.172	0.191	0.047	0.12
84	7.00	0.33	0.172	0.190	0.047	0.12
85	7.08	0.33	0.172	0.190	0.047	0.12
86	7.17	0.33	0.172	0.189	0.047	0.12
87	7.25	0.33	0.172	0.188	0.047	0.12
88	7.33	0.37	0.189	0.187	---	0.00
89	7.42	0.37	0.189	0.186	---	0.00
90	7.50	0.37	0.189	0.185	---	0.00
91	7.58	0.40	0.206	0.184	---	0.02
92	7.67	0.40	0.206	0.184	---	0.02
93	7.75	0.40	0.206	0.183	---	0.02
94	7.83	0.43	0.223	0.182	---	0.04
95	7.92	0.43	0.223	0.181	---	0.04
96	8.00	0.43	0.223	0.180	---	0.04
97	8.08	0.50	0.257	0.179	---	0.08
98	8.17	0.50	0.257	0.178	---	0.08
99	8.25	0.50	0.257	0.178	---	0.08
100	8.33	0.50	0.257	0.177	---	0.08
101	8.42	0.50	0.257	0.176	---	0.08
102	8.50	0.50	0.257	0.175	---	0.08
103	8.58	0.53	0.275	0.174	---	0.10
104	8.67	0.53	0.275	0.174	---	0.10
105	8.75	0.53	0.275	0.173	---	0.10
106	8.83	0.57	0.292	0.172	---	0.12
107	8.92	0.57	0.292	0.171	---	0.12
108	9.00	0.57	0.292	0.170	---	0.12
109	9.08	0.63	0.326	0.169	---	0.16
110	9.17	0.63	0.326	0.169	---	0.16
111	9.25	0.63	0.326	0.168	---	0.16
112	9.33	0.67	0.343	0.167	---	0.18
113	9.42	0.67	0.343	0.166	---	0.18
114	9.50	0.67	0.343	0.165	---	0.18
115	9.58	0.70	0.360	0.165	---	0.20
116	9.67	0.70	0.360	0.164	---	0.20
117	9.75	0.70	0.360	0.163	---	0.20
118	9.83	0.73	0.377	0.162	---	0.22
119	9.92	0.73	0.377	0.162	---	0.22
120	10.00	0.73	0.377	0.161	---	0.22
121	10.08	0.50	0.257	0.160	---	0.10
122	10.17	0.50	0.257	0.159	---	0.10
123	10.25	0.50	0.257	0.158	---	0.10
124	10.33	0.50	0.257	0.158	---	0.10
125	10.42	0.50	0.257	0.157	---	0.10
126	10.50	0.50	0.257	0.156	---	0.10

127	10.58	0.67	0.343	0.155	---	0.19
128	10.67	0.67	0.343	0.155	---	0.19
129	10.75	0.67	0.343	0.154	---	0.19
130	10.83	0.67	0.343	0.153	---	0.19
131	10.92	0.67	0.343	0.152	---	0.19
132	11.00	0.67	0.343	0.152	---	0.19
133	11.08	0.63	0.326	0.151	---	0.18
134	11.17	0.63	0.326	0.150	---	0.18
135	11.25	0.63	0.326	0.149	---	0.18
136	11.33	0.63	0.326	0.149	---	0.18
137	11.42	0.63	0.326	0.148	---	0.18
138	11.50	0.63	0.326	0.147	---	0.18
139	11.58	0.57	0.292	0.146	---	0.15
140	11.67	0.57	0.292	0.146	---	0.15
141	11.75	0.57	0.292	0.145	---	0.15
142	11.83	0.60	0.309	0.144	---	0.16
143	11.92	0.60	0.309	0.144	---	0.17
144	12.00	0.60	0.309	0.143	---	0.17
145	12.08	0.83	0.429	0.142	---	0.29
146	12.17	0.83	0.429	0.141	---	0.29
147	12.25	0.83	0.429	0.141	---	0.29
148	12.33	0.87	0.446	0.140	---	0.31
149	12.42	0.87	0.446	0.139	---	0.31
150	12.50	0.87	0.446	0.139	---	0.31
151	12.58	0.93	0.480	0.138	---	0.34
152	12.67	0.93	0.480	0.137	---	0.34
153	12.75	0.93	0.480	0.136	---	0.34
154	12.83	0.97	0.498	0.136	---	0.36
155	12.92	0.97	0.498	0.135	---	0.36
156	13.00	0.97	0.498	0.134	---	0.36
157	13.08	1.13	0.583	0.134	---	0.45
158	13.17	1.13	0.583	0.133	---	0.45
159	13.25	1.13	0.583	0.132	---	0.45
160	13.33	1.13	0.583	0.132	---	0.45
161	13.42	1.13	0.583	0.131	---	0.45
162	13.50	1.13	0.583	0.130	---	0.45
163	13.58	0.77	0.395	0.130	---	0.26
164	13.67	0.77	0.395	0.129	---	0.27
165	13.75	0.77	0.395	0.128	---	0.27
166	13.83	0.77	0.395	0.128	---	0.27
167	13.92	0.77	0.395	0.127	---	0.27
168	14.00	0.77	0.395	0.126	---	0.27
169	14.08	0.90	0.463	0.126	---	0.34
170	14.17	0.90	0.463	0.125	---	0.34
171	14.25	0.90	0.463	0.125	---	0.34
172	14.33	0.87	0.446	0.124	---	0.32
173	14.42	0.87	0.446	0.123	---	0.32
174	14.50	0.87	0.446	0.123	---	0.32
175	14.58	0.87	0.446	0.122	---	0.32
176	14.67	0.87	0.446	0.121	---	0.32
177	14.75	0.87	0.446	0.121	---	0.33
178	14.83	0.83	0.429	0.120	---	0.31
179	14.92	0.83	0.429	0.120	---	0.31
180	15.00	0.83	0.429	0.119	---	0.31
181	15.08	0.80	0.412	0.118	---	0.29
182	15.17	0.80	0.412	0.118	---	0.29
183	15.25	0.80	0.412	0.117	---	0.29
184	15.33	0.77	0.395	0.116	---	0.28
185	15.42	0.77	0.395	0.116	---	0.28
186	15.50	0.77	0.395	0.115	---	0.28
187	15.58	0.63	0.326	0.115	---	0.21
188	15.67	0.63	0.326	0.114	---	0.21
189	15.75	0.63	0.326	0.114	---	0.21
190	15.83	0.63	0.326	0.113	---	0.21
191	15.92	0.63	0.326	0.112	---	0.21
192	16.00	0.63	0.326	0.112	---	0.21
193	16.08	0.13	0.069	0.111	0.019	0.05
194	16.17	0.13	0.069	0.111	0.019	0.05
195	16.25	0.13	0.069	0.110	0.019	0.05
196	16.33	0.13	0.069	0.110	0.019	0.05
197	16.42	0.13	0.069	0.109	0.019	0.05

198	16.50	0.13	0.069	0.108	0.019	0.05
199	16.58	0.10	0.051	0.108	0.014	0.04
200	16.67	0.10	0.051	0.107	0.014	0.04
201	16.75	0.10	0.051	0.107	0.014	0.04
202	16.83	0.10	0.051	0.106	0.014	0.04
203	16.92	0.10	0.051	0.106	0.014	0.04
204	17.00	0.10	0.051	0.105	0.014	0.04
205	17.08	0.17	0.086	0.105	0.024	0.06
206	17.17	0.17	0.086	0.104	0.024	0.06
207	17.25	0.17	0.086	0.104	0.024	0.06
208	17.33	0.17	0.086	0.103	0.024	0.06
209	17.42	0.17	0.086	0.103	0.024	0.06
210	17.50	0.17	0.086	0.102	0.024	0.06
211	17.58	0.17	0.086	0.102	0.024	0.06
212	17.67	0.17	0.086	0.101	0.024	0.06
213	17.75	0.17	0.086	0.100	0.024	0.06
214	17.83	0.13	0.069	0.100	0.019	0.05
215	17.92	0.13	0.069	0.100	0.019	0.05
216	18.00	0.13	0.069	0.099	0.019	0.05
217	18.08	0.13	0.069	0.099	0.019	0.05
218	18.17	0.13	0.069	0.098	0.019	0.05
219	18.25	0.13	0.069	0.098	0.019	0.05
220	18.33	0.13	0.069	0.097	0.019	0.05
221	18.42	0.13	0.069	0.097	0.019	0.05
222	18.50	0.13	0.069	0.096	0.019	0.05
223	18.58	0.10	0.051	0.096	0.014	0.04
224	18.67	0.10	0.051	0.095	0.014	0.04
225	18.75	0.10	0.051	0.095	0.014	0.04
226	18.83	0.07	0.034	0.094	0.009	0.02
227	18.92	0.07	0.034	0.094	0.009	0.02
228	19.00	0.07	0.034	0.093	0.009	0.02
229	19.08	0.10	0.051	0.093	0.014	0.04
230	19.17	0.10	0.051	0.093	0.014	0.04
231	19.25	0.10	0.051	0.092	0.014	0.04
232	19.33	0.13	0.069	0.092	0.019	0.05
233	19.42	0.13	0.069	0.091	0.019	0.05
234	19.50	0.13	0.069	0.091	0.019	0.05
235	19.58	0.10	0.051	0.090	0.014	0.04
236	19.67	0.10	0.051	0.090	0.014	0.04
237	19.75	0.10	0.051	0.090	0.014	0.04
238	19.83	0.07	0.034	0.089	0.009	0.02
239	19.92	0.07	0.034	0.089	0.009	0.02
240	20.00	0.07	0.034	0.088	0.009	0.02
241	20.08	0.10	0.051	0.088	0.014	0.04
242	20.17	0.10	0.051	0.088	0.014	0.04
243	20.25	0.10	0.051	0.087	0.014	0.04
244	20.33	0.10	0.051	0.087	0.014	0.04
245	20.42	0.10	0.051	0.086	0.014	0.04
246	20.50	0.10	0.051	0.086	0.014	0.04
247	20.58	0.10	0.051	0.086	0.014	0.04
248	20.67	0.10	0.051	0.085	0.014	0.04
249	20.75	0.10	0.051	0.085	0.014	0.04
250	20.83	0.07	0.034	0.085	0.009	0.02
251	20.92	0.07	0.034	0.084	0.009	0.02
252	21.00	0.07	0.034	0.084	0.009	0.02
253	21.08	0.10	0.051	0.084	0.014	0.04
254	21.17	0.10	0.051	0.083	0.014	0.04
255	21.25	0.10	0.051	0.083	0.014	0.04
256	21.33	0.07	0.034	0.083	0.009	0.02
257	21.42	0.07	0.034	0.082	0.009	0.02
258	21.50	0.07	0.034	0.082	0.009	0.02
259	21.58	0.10	0.051	0.082	0.014	0.04
260	21.67	0.10	0.051	0.081	0.014	0.04
261	21.75	0.10	0.051	0.081	0.014	0.04
262	21.83	0.07	0.034	0.081	0.009	0.02
263	21.92	0.07	0.034	0.081	0.009	0.02
264	22.00	0.07	0.034	0.080	0.009	0.02
265	22.08	0.10	0.051	0.080	0.014	0.04
266	22.17	0.10	0.051	0.080	0.014	0.04
267	22.25	0.10	0.051	0.080	0.014	0.04
268	22.33	0.07	0.034	0.079	0.009	0.02

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269  22.42     0.07      0.034         0.079     0.009         0.02
270  22.50     0.07      0.034         0.079     0.009         0.02
271  22.58     0.07      0.034         0.079     0.009         0.02
272  22.67     0.07      0.034         0.078     0.009         0.02
273  22.75     0.07      0.034         0.078     0.009         0.02
274  22.83     0.07      0.034         0.078     0.009         0.02
275  22.92     0.07      0.034         0.078     0.009         0.02
276  23.00     0.07      0.034         0.078     0.009         0.02
277  23.08     0.07      0.034         0.077     0.009         0.02
278  23.17     0.07      0.034         0.077     0.009         0.02
279  23.25     0.07      0.034         0.077     0.009         0.02
280  23.33     0.07      0.034         0.077     0.009         0.02
281  23.42     0.07      0.034         0.077     0.009         0.02
282  23.50     0.07      0.034         0.077     0.009         0.02
283  23.58     0.07      0.034         0.077     0.009         0.02
284  23.67     0.07      0.034         0.076     0.009         0.02
285  23.75     0.07      0.034         0.076     0.009         0.02
286  23.83     0.07      0.034         0.076     0.009         0.02
287  23.92     0.07      0.034         0.076     0.009         0.02
288  24.00     0.07      0.034         0.076     0.009         0.02
    Sum =     100.0                                   Sum =    32.3
      Flood volume = Effective rainfall      2.69(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      1.60(In)
      Total soil loss =     0.135(Ac.Ft)
      Total rainfall =      4.29(In)
      Flood volume =        9861.9 Cubic Feet
      Total soil loss =        5863.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.461(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       24 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0000      0.00  Q         |         |         |         |
   0+15       0.0001      0.00  Q         |         |         |         |
   0+20       0.0001      0.00  Q         |         |         |         |
   0+25       0.0001      0.01  Q         |         |         |         |
   0+30       0.0002      0.01  Q         |         |         |         |
   0+35       0.0002      0.01  Q         |         |         |         |
   0+40       0.0003      0.01  Q         |         |         |         |
   0+45       0.0003      0.01  Q         |         |         |         |
   0+50       0.0003      0.01  Q         |         |         |         |
   0+55       0.0004      0.01  Q         |         |         |         |
   1+ 0       0.0004      0.01  Q         |         |         |         |
   1+ 5       0.0005      0.01  Q         |         |         |         |
   1+10       0.0005      0.01  Q         |         |         |         |
   1+15       0.0006      0.01  Q         |         |         |         |
   1+20       0.0006      0.01  Q         |         |         |         |
   1+25       0.0006      0.01  Q         |         |         |         |
   1+30       0.0007      0.01  Q         |         |         |         |
   1+35       0.0007      0.01  Q         |         |         |         |
   1+40       0.0008      0.01  Q         |         |         |         |
   1+45       0.0008      0.01  Q         |         |         |         |
   1+50       0.0009      0.01  Q         |         |         |         |
   1+55       0.0009      0.01  Q         |         |         |         |
   2+ 0       0.0010      0.01  Q         |         |         |         |
   2+ 5       0.0010      0.01  Q         |         |         |         |
   2+10       0.0011      0.01  Q         |         |         |         |
   2+15       0.0011      0.01  Q         |         |         |         |
   2+20       0.0012      0.01  Q         |         |         |         |
   2+25       0.0012      0.01  Q         |         |         |         |
   2+30       0.0013      0.01  Q         |         |         |         |
   2+35       0.0013      0.01  Q         |         |         |         |
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2+40	0.0014	0.01	Q	|	|	|	|
2+45	0.0015	0.01	Q	|	|	|	|
2+50	0.0015	0.01	Q	|	|	|	|
2+55	0.0016	0.01	Q	|	|	|	|
3+ 0	0.0017	0.01	Q	|	|	|	|
3+ 5	0.0017	0.01	Q	|	|	|	|
3+10	0.0018	0.01	Q	|	|	|	|
3+15	0.0019	0.01	Q	|	|	|	|
3+20	0.0019	0.01	Q	|	|	|	|
3+25	0.0020	0.01	Q	|	|	|	|
3+30	0.0020	0.01	Q	|	|	|	|
3+35	0.0021	0.01	Q	|	|	|	|
3+40	0.0022	0.01	Q	|	|	|	|
3+45	0.0022	0.01	Q	|	|	|	|
3+50	0.0023	0.01	Q	|	|	|	|
3+55	0.0024	0.01	Q	|	|	|	|
4+ 0	0.0025	0.01	Q	|	|	|	|
4+ 5	0.0026	0.01	Q	|	|	|	|
4+10	0.0026	0.01	Q	|	|	|	|
4+15	0.0027	0.01	Q	|	|	|	|
4+20	0.0028	0.01	Q	|	|	|	|
4+25	0.0029	0.01	Q	|	|	|	|
4+30	0.0030	0.01	Q	|	|	|	|
4+35	0.0031	0.01	Q	|	|	|	|
4+40	0.0032	0.01	Q	|	|	|	|
4+45	0.0033	0.01	Q	|	|	|	|
4+50	0.0034	0.01	Q	|	|	|	|
4+55	0.0035	0.02	Q	|	|	|	|
5+ 0	0.0036	0.02	Q	|	|	|	|
5+ 5	0.0036	0.01	Q	|	|	|	|
5+10	0.0037	0.01	Q	|	|	|	|
5+15	0.0038	0.01	Q	|	|	|	|
5+20	0.0039	0.01	Q	|	|	|	|
5+25	0.0040	0.01	Q	|	|	|	|
5+30	0.0041	0.01	Q	|	|	|	|
5+35	0.0042	0.01	Q	|	|	|	|
5+40	0.0043	0.02	Q	|	|	|	|
5+45	0.0044	0.02	Q	|	|	|	|
5+50	0.0045	0.02	Q	|	|	|	|
5+55	0.0046	0.02	Q	|	|	|	|
6+ 0	0.0047	0.02	Q	|	|	|	|
6+ 5	0.0048	0.02	Q	|	|	|	|
6+10	0.0049	0.02	Q	|	|	|	|
6+15	0.0050	0.02	Q	|	|	|	|
6+20	0.0052	0.02	Q	|	|	|	|
6+25	0.0053	0.02	Q	|	|	|	|
6+30	0.0054	0.02	Q	|	|	|	|
6+35	0.0055	0.02	Q	|	|	|	|
6+40	0.0057	0.02	Q	|	|	|	|
6+45	0.0058	0.02	Q	|	|	|	|
6+50	0.0059	0.02	Q	|	|	|	|
6+55	0.0060	0.02	Q	|	|	|	|
7+ 0	0.0062	0.02	Q	|	|	|	|
7+ 5	0.0063	0.02	Q	|	|	|	|
7+10	0.0064	0.02	Q	|	|	|	|
7+15	0.0066	0.02	Q	|	|	|	|
7+20	0.0067	0.02	Q	|	|	|	|
7+25	0.0068	0.02	Q	|	|	|	|
7+30	0.0070	0.02	Q	|	|	|	|
7+35	0.0071	0.02	Q	|	|	|	|
7+40	0.0073	0.02	Q	|	|	|	|
7+45	0.0075	0.02	Q	|	|	|	|
7+50	0.0076	0.02	Q	|	|	|	|
7+55	0.0078	0.02	Q	|	|	|	|
8+ 0	0.0080	0.02	Q	|	|	|	|
8+ 5	0.0081	0.03	Q	|	|	|	|
8+10	0.0083	0.03	Q	|	|	|	|
8+15	0.0085	0.03	Q	|	|	|	|
8+20	0.0087	0.03	Q	|	|	|	|
8+25	0.0089	0.03	Q	|	|	|	|
8+30	0.0091	0.03	Q	|	|	|	|

8+35	0.0093	0.03	Q	|	|	|	|
8+40	0.0095	0.03	QV	|	|	|	|
8+45	0.0097	0.03	QV	|	|	|	|
8+50	0.0100	0.03	QV	|	|	|	|
8+55	0.0102	0.03	QV	|	|	|	|
9+ 0	0.0104	0.03	QV	|	|	|	|
9+ 5	0.0106	0.03	QV	|	|	|	|
9+10	0.0109	0.04	QV	|	|	|	|
9+15	0.0111	0.04	QV	|	|	|	|
9+20	0.0114	0.04	QV	|	|	|	|
9+25	0.0117	0.04	QV	|	|	|	|
9+30	0.0119	0.04	QV	|	|	|	|
9+35	0.0122	0.04	QV	|	|	|	|
9+40	0.0125	0.04	QV	|	|	|	|
9+45	0.0127	0.04	QV	|	|	|	|
9+50	0.0130	0.04	QV	|	|	|	|
9+55	0.0133	0.04	QV	|	|	|	|
10+ 0	0.0136	0.04	QV	|	|	|	|
10+ 5	0.0138	0.03	QV	|	|	|	|
10+10	0.0140	0.03	QV	|	|	|	|
10+15	0.0142	0.03	QV	|	|	|	|
10+20	0.0144	0.03	QV	|	|	|	|
10+25	0.0146	0.03	QV	|	|	|	|
10+30	0.0148	0.03	QV	|	|	|	|
10+35	0.0150	0.03	QV	|	|	|	|
10+40	0.0153	0.04	QV	|	|	|	|
10+45	0.0156	0.04	QV	|	|	|	|
10+50	0.0158	0.04	QV	|	|	|	|
10+55	0.0161	0.04	QV	|	|	|	|
11+ 0	0.0163	0.04	QV	|	|	|	|
11+ 5	0.0166	0.04	QV	|	|	|	|
11+10	0.0169	0.04	QV	|	|	|	|
11+15	0.0171	0.04	QV	|	|	|	|
11+20	0.0173	0.04	QV	|	|	|	|
11+25	0.0176	0.04	QV	|	|	|	|
11+30	0.0178	0.04	QV	|	|	|	|
11+35	0.0181	0.03	QV	|	|	|	|
11+40	0.0183	0.03	QV	|	|	|	|
11+45	0.0185	0.03	QV	|	|	|	|
11+50	0.0188	0.03	QV	|	|	|	|
11+55	0.0190	0.03	QV	|	|	|	|
12+ 0	0.0192	0.03	Q V	|	|	|	|
12+ 5	0.0195	0.04	Q V	|	|	|	|
12+10	0.0198	0.05	Q V	|	|	|	|
12+15	0.0202	0.05	Q V	|	|	|	|
12+20	0.0205	0.05	Q V	|	|	|	|
12+25	0.0208	0.05	Q V	|	|	|	|
12+30	0.0212	0.05	Q V	|	|	|	|
12+35	0.0215	0.05	Q V	|	|	|	|
12+40	0.0219	0.05	Q V	|	|	|	|
12+45	0.0223	0.05	Q V	|	|	|	|
12+50	0.0226	0.05	Q V	|	|	|	|
12+55	0.0230	0.05	Q V	|	|	|	|
13+ 0	0.0234	0.06	Q V	|	|	|	|
13+ 5	0.0238	0.06	Q V	|	|	|	|
13+10	0.0243	0.06	Q V	|	|	|	|
13+15	0.0247	0.06	Q V	|	|	|	|
13+20	0.0251	0.06	Q V	|	|	|	|
13+25	0.0256	0.06	Q V	|	|	|	|
13+30	0.0260	0.06	Q V	|	|	|	|
13+35	0.0264	0.05	Q V	|	|	|	|
13+40	0.0267	0.04	Q V	|	|	|	|
13+45	0.0270	0.04	Q V	|	|	|	|
13+50	0.0273	0.04	Q V	|	|	|	|
13+55	0.0276	0.04	Q V	|	|	|	|
14+ 0	0.0279	0.04	Q V	|	|	|	|
14+ 5	0.0282	0.05	Q V	|	|	|	|
14+10	0.0286	0.05	Q V	|	|	|	|
14+15	0.0289	0.05	Q V	|	|	|	|
14+20	0.0293	0.05	Q V	|	|	|	|
14+25	0.0296	0.05	Q V	|	|	|	|

14+30	0.0300	0.05	Q	V	|	|	|	|
14+35	0.0303	0.05	Q	V	|	|	|	|
14+40	0.0306	0.05	Q	V	|	|	|	|
14+45	0.0310	0.05	Q	V	|	|	|	|
14+50	0.0313	0.05	Q	V	|	|	|	|
14+55	0.0316	0.05	Q	V	|	|	|	|
15+ 0	0.0320	0.05	Q	V	|	|	|	|
15+ 5	0.0323	0.05	Q	V	|	|	|	|
15+10	0.0326	0.05	Q	V	|	|	|	|
15+15	0.0329	0.05	Q	V	|	|	|	|
15+20	0.0332	0.04	Q	V	|	|	|	|
15+25	0.0335	0.04	Q	V	|	|	|	|
15+30	0.0338	0.04	Q	V	|	|	|	|
15+35	0.0341	0.04	Q	V	|	|	|	|
15+40	0.0343	0.04	Q	V	|	|	|	|
15+45	0.0346	0.04	Q	V	|	|	|	|
15+50	0.0348	0.04	Q	V	|	|	|	|
15+55	0.0351	0.04	Q	V	|	|	|	|
16+ 0	0.0353	0.04	Q	V	|	|	|	|
16+ 5	0.0355	0.02	Q	V	|	|	|	|
16+10	0.0355	0.01	Q	V	|	|	|	|
16+15	0.0356	0.01	Q	V	|	|	|	|
16+20	0.0356	0.01	Q	V	|	|	|	|
16+25	0.0357	0.01	Q	V	|	|	|	|
16+30	0.0357	0.01	Q	V	|	|	|	|
16+35	0.0358	0.01	Q	V	|	|	|	|
16+40	0.0358	0.01	Q	V	|	|	|	|
16+45	0.0359	0.01	Q	V	|	|	|	|
16+50	0.0359	0.01	Q	V	|	|	|	|
16+55	0.0359	0.01	Q	V	|	|	|	|
17+ 0	0.0360	0.01	Q	V	|	|	|	|
17+ 5	0.0360	0.01	Q	V	|	|	|	|
17+10	0.0361	0.01	Q	V	|	|	|	|
17+15	0.0362	0.01	Q	V	|	|	|	|
17+20	0.0362	0.01	Q	V	|	|	|	|
17+25	0.0363	0.01	Q	V	|	|	|	|
17+30	0.0364	0.01	Q	V	|	|	|	|
17+35	0.0364	0.01	Q	V	|	|	|	|
17+40	0.0365	0.01	Q	V	|	|	|	|
17+45	0.0365	0.01	Q	V	|	|	|	|
17+50	0.0366	0.01	Q	V	|	|	|	|
17+55	0.0367	0.01	Q	V	|	|	|	|
18+ 0	0.0367	0.01	Q	V	|	|	|	|
18+ 5	0.0368	0.01	Q	V	|	|	|	|
18+10	0.0368	0.01	Q	V	|	|	|	|
18+15	0.0369	0.01	Q	V	|	|	|	|
18+20	0.0369	0.01	Q	V	|	|	|	|
18+25	0.0370	0.01	Q	V	|	|	|	|
18+30	0.0370	0.01	Q	V	|	|	|	|
18+35	0.0371	0.01	Q	V	|	|	|	|
18+40	0.0371	0.01	Q	V	|	|	|	|
18+45	0.0371	0.01	Q	V	|	|	|	|
18+50	0.0372	0.00	Q	V	|	|	|	|
18+55	0.0372	0.00	Q	V	|	|	|	|
19+ 0	0.0372	0.00	Q	V	|	|	|	|
19+ 5	0.0373	0.00	Q	V	|	|	|	|
19+10	0.0373	0.01	Q	V	|	|	|	|
19+15	0.0373	0.01	Q	V	|	|	|	|
19+20	0.0374	0.01	Q	V	|	|	|	|
19+25	0.0374	0.01	Q	V	|	|	|	|
19+30	0.0375	0.01	Q	V	|	|	|	|
19+35	0.0375	0.01	Q	V	|	|	|	|
19+40	0.0376	0.01	Q	V	|	|	|	|
19+45	0.0376	0.01	Q	V	|	|	|	|
19+50	0.0377	0.00	Q	V	|	|	|	|
19+55	0.0377	0.00	Q	V	|	|	|	|
20+ 0	0.0377	0.00	Q	V	|	|	|	|
20+ 5	0.0377	0.00	Q	V	|	|	|	|
20+10	0.0378	0.01	Q	V	|	|	|	|
20+15	0.0378	0.01	Q	V	|	|	|	|
20+20	0.0379	0.01	Q	V	|	|	|	|

20+25	0.0379	0.01	Q	V	|	|	|	|
20+30	0.0379	0.01	Q	V	|	|	|	|
20+35	0.0380	0.01	Q	V	|	|	|	|
20+40	0.0380	0.01	Q	V	|	|	|	|
20+45	0.0381	0.01	Q	V	|	|	|	|
20+50	0.0381	0.00	Q	V	|	|	|	|
20+55	0.0381	0.00	Q	V	|	|	|	|
21+ 0	0.0381	0.00	Q	V	|	|	|	|
21+ 5	0.0382	0.00	Q	V	|	|	|	|
21+10	0.0382	0.01	Q	V	|	|	|	|
21+15	0.0382	0.01	Q	V	|	|	|	|
21+20	0.0383	0.00	Q	V	|	|	|	|
21+25	0.0383	0.00	Q	V	|	|	|	|
21+30	0.0383	0.00	Q	V	|	|	|	|
21+35	0.0384	0.00	Q	V	|	|	|	|
21+40	0.0384	0.01	Q	V	|	|	|	|
21+45	0.0384	0.01	Q	V	|	|	|	|
21+50	0.0385	0.00	Q	V	|	|	|	|
21+55	0.0385	0.00	Q	V	|	|	|	|
22+ 0	0.0385	0.00	Q	V	|	|	|	|
22+ 5	0.0386	0.00	Q	V	|	|	|	|
22+10	0.0386	0.01	Q	V	|	|	|	|
22+15	0.0386	0.01	Q	V	|	|	|	|
22+20	0.0387	0.00	Q	V	|	|	|	|
22+25	0.0387	0.00	Q	V	|	|	|	|
22+30	0.0387	0.00	Q	V	|	|	|	|
22+35	0.0387	0.00	Q	V	|	|	|	|
22+40	0.0388	0.00	Q	V	|	|	|	|
22+45	0.0388	0.00	Q	V	|	|	|	|
22+50	0.0388	0.00	Q	V	|	|	|	|
22+55	0.0389	0.00	Q	V	|	|	|	|
23+ 0	0.0389	0.00	Q	V	|	|	|	|
23+ 5	0.0389	0.00	Q	V	|	|	|	|
23+10	0.0389	0.00	Q	V	|	|	|	|
23+15	0.0390	0.00	Q	V	|	|	|	|
23+20	0.0390	0.00	Q	V	|	|	|	|
23+25	0.0390	0.00	Q	V	|	|	|	|
23+30	0.0390	0.00	Q	V	|	|	|	|
23+35	0.0391	0.00	Q	V	|	|	|	|
23+40	0.0391	0.00	Q	V	|	|	|	|
23+45	0.0391	0.00	Q	V	|	|	|	|
23+50	0.0391	0.00	Q	V	|	|	|	|
23+55	0.0392	0.00	Q	V	|	|	|	|
24+ 0	0.0392	0.00	Q	V	|	|	|	|
24+ 5	0.0392	0.00	Q	V	|	|	|	|
24+10	0.0392	0.00	Q	V	|	|	|	|
24+15	0.0393	0.00	Q	V	|	|	|	|
24+20	0.0393	0.01	Q	V	|	|	|	|
24+25	0.0394	0.01	Q	V	|	|	|	|
24+30	0.0394	0.01	Q	V	|	|	|	|
24+35	0.0395	0.01	Q	V	|	|	|	|
24+40	0.0395	0.01	Q	V	|	|	|	|
24+45	0.0396	0.01	Q	V	|	|	|	|
24+50	0.0396	0.01	Q	V	|	|	|	|
24+55	0.0397	0.01	Q	V	|	|	|	|
25+ 0	0.0398	0.01	Q	V	|	|	|	|
25+ 5	0.0398	0.01	Q	V	|	|	|	|
25+10	0.0399	0.01	Q	V	|	|	|	|
25+15	0.0399	0.01	Q	V	|	|	|	|
25+20	0.0400	0.01	Q	V	|	|	|	|
25+25	0.0400	0.01	Q	V	|	|	|	|
25+30	0.0401	0.01	Q	V	|	|	|	|
25+35	0.0401	0.01	Q	V	|	|	|	|
25+40	0.0402	0.01	Q	V	|	|	|	|
25+45	0.0402	0.01	Q	V	|	|	|	|
25+50	0.0403	0.01	Q	V	|	|	|	|
25+55	0.0403	0.01	Q	V	|	|	|	|
26+ 0	0.0404	0.01	Q	V	|	|	|	|
26+ 5	0.0405	0.01	Q	V	|	|	|	|
26+10	0.0405	0.01	Q	V	|	|	|	|
26+15	0.0406	0.01	Q	V	|	|	|	|

26+20	0.0407	0.01	Q	V	|	|	|	|
26+25	0.0407	0.01	Q	V	|	|	|	|
26+30	0.0408	0.01	Q	V	|	|	|	|
26+35	0.0409	0.01	Q	V	|	|	|	|
26+40	0.0410	0.01	Q	V	|	|	|	|
26+45	0.0410	0.01	Q	V	|	|	|	|
26+50	0.0411	0.01	Q	V	|	|	|	|
26+55	0.0412	0.01	Q	V	|	|	|	|
27+ 0	0.0413	0.01	Q	V	|	|	|	|
27+ 5	0.0414	0.01	Q	V	|	|	|	|
27+10	0.0415	0.01	Q	V	|	|	|	|
27+15	0.0415	0.01	Q	V	|	|	|	|
27+20	0.0416	0.01	Q	V	|	|	|	|
27+25	0.0417	0.01	Q	V	|	|	|	|
27+30	0.0418	0.01	Q	V	|	|	|	|
27+35	0.0419	0.01	Q	V	|	|	|	|
27+40	0.0420	0.01	Q	V	|	|	|	|
27+45	0.0420	0.01	Q	V	|	|	|	|
27+50	0.0421	0.01	Q	V	|	|	|	|
27+55	0.0422	0.01	Q	V	|	|	|	|
28+ 0	0.0423	0.01	Q	V	|	|	|	|
28+ 5	0.0424	0.01	Q	V	|	|	|	|
28+10	0.0425	0.01	Q	V	|	|	|	|
28+15	0.0426	0.01	Q	V	|	|	|	|
28+20	0.0427	0.02	Q	V	|	|	|	|
28+25	0.0429	0.02	Q	V	|	|	|	|
28+30	0.0430	0.02	Q	V	|	|	|	|
28+35	0.0431	0.02	Q	V	|	|	|	|
28+40	0.0432	0.02	Q	V	|	|	|	|
28+45	0.0433	0.02	Q	V	|	|	|	|
28+50	0.0434	0.02	Q	V	|	|	|	|
28+55	0.0436	0.02	Q	V	|	|	|	|
29+ 0	0.0437	0.02	Q	V	|	|	|	|
29+ 5	0.0438	0.02	Q	V	|	|	|	|
29+10	0.0439	0.01	Q	V	|	|	|	|
29+15	0.0440	0.01	Q	V	|	|	|	|
29+20	0.0441	0.02	Q	V	|	|	|	|
29+25	0.0442	0.02	Q	V	|	|	|	|
29+30	0.0444	0.02	Q	V	|	|	|	|
29+35	0.0445	0.02	Q	V	|	|	|	|
29+40	0.0446	0.02	Q	V	|	|	|	|
29+45	0.0447	0.02	Q	V	|	|	|	|
29+50	0.0449	0.02	Q	V	|	|	|	|
29+55	0.0450	0.02	Q	V	|	|	|	|
30+ 0	0.0451	0.02	Q	V	|	|	|	|
30+ 5	0.0453	0.02	Q	V	|	|	|	|
30+10	0.0454	0.02	Q	V	|	|	|	|
30+15	0.0456	0.02	Q	V	|	|	|	|
30+20	0.0457	0.02	Q	V	|	|	|	|
30+25	0.0459	0.02	Q	V	|	|	|	|
30+30	0.0460	0.02	Q	V	|	|	|	|
30+35	0.0462	0.02	Q	V	|	|	|	|
30+40	0.0464	0.02	Q	V	|	|	|	|
30+45	0.0465	0.02	Q	V	|	|	|	|
30+50	0.0467	0.02	Q	V	|	|	|	|
30+55	0.0469	0.02	Q	V	|	|	|	|
31+ 0	0.0470	0.02	Q	V	|	|	|	|
31+ 5	0.0472	0.02	Q	V	|	|	|	|
31+10	0.0473	0.02	Q	V	|	|	|	|
31+15	0.0475	0.02	Q	V	|	|	|	|
31+20	0.0477	0.03	Q	V	|	|	|	|
31+25	0.0479	0.03	Q	V	|	|	|	|
31+30	0.0481	0.03	Q	V	|	|	|	|
31+35	0.0482	0.03	Q	V	|	|	|	|
31+40	0.0484	0.03	Q	V	|	|	|	|
31+45	0.0486	0.03	Q	V	|	|	|	|
31+50	0.0488	0.03	Q	V	|	|	|	|
31+55	0.0491	0.03	Q	V	|	|	|	|
32+ 0	0.0493	0.03	Q	V	|	|	|	|
32+ 5	0.0495	0.03	Q	V	|	|	|	|
32+10	0.0498	0.04	Q	V	|	|	|	|

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32+15       0.0500      0.04  Q    V    |          |          |          |
32+20       0.0503      0.04  Q    V    |          |          |          |
32+25       0.0505      0.04  Q    V    |          |          |          |
32+30       0.0508      0.04  Q    V    |          |          |          |
32+35       0.0510      0.04  Q    V    |          |          |          |
32+40       0.0513      0.04  Q    V    |          |          |          |
32+45       0.0515      0.04  Q    V    |          |          |          |
32+50       0.0518      0.04  Q    V    |          |          |          |
32+55       0.0521      0.04  Q    V    |          |          |          |
33+ 0       0.0524      0.04  Q    V    |          |          |          |
33+ 5       0.0527      0.04  Q    V    |          |          |          |
33+10       0.0530      0.05  Q    V    |          |          |          |
33+15       0.0533      0.05  Q    V    |          |          |          |
33+20       0.0536      0.05  Q    V    |          |          |          |
33+25       0.0540      0.05  Q    V    |          |          |          |
33+30       0.0543      0.05  Q    V    |          |          |          |
33+35       0.0546      0.05  Q    V    |          |          |          |
33+40       0.0550      0.05  Q    V    |          |          |          |
33+45       0.0553      0.05  Q    V    |          |          |          |
33+50       0.0557      0.05  Q    V    |          |          |          |
33+55       0.0560      0.05  Q    V    |          |          |          |
34+ 0       0.0564      0.05  Q    V    |          |          |          |
34+ 5       0.0567      0.04  Q    V    |          |          |          |
34+10       0.0570      0.04  Q    V    |          |          |          |
34+15       0.0572      0.04  Q    V    |          |          |          |
34+20       0.0575      0.04  Q     V   |          |          |          |
34+25       0.0577      0.04  Q     V   |          |          |          |
34+30       0.0580      0.04  Q     V   |          |          |          |
34+35       0.0583      0.04  Q     V   |          |          |          |
34+40       0.0586      0.05  Q     V   |          |          |          |
34+45       0.0589      0.05  Q     V   |          |          |          |
34+50       0.0592      0.05  Q     V   |          |          |          |
34+55       0.0596      0.05  Q     V   |          |          |          |
35+ 0       0.0599      0.05  Q     V   |          |          |          |
35+ 5       0.0602      0.05  Q     V   |          |          |          |
35+10       0.0605      0.05  Q     V   |          |          |          |
35+15       0.0609      0.05  Q     V   |          |          |          |
35+20       0.0612      0.05  Q     V   |          |          |          |
35+25       0.0615      0.05  Q     V   |          |          |          |
35+30       0.0618      0.05  Q     V   |          |          |          |
35+35       0.0621      0.04  Q     V   |          |          |          |
35+40       0.0624      0.04  Q     V   |          |          |          |
35+45       0.0627      0.04  Q     V   |          |          |          |
35+50       0.0629      0.04  Q     V   |          |          |          |
35+55       0.0632      0.04  Q     V   |          |          |          |
36+ 0       0.0635      0.04  Q     V   |          |          |          |
36+ 5       0.0639      0.05  Q     V   |          |          |          |
36+10       0.0643      0.06  Q     V   |          |          |          |
36+15       0.0647      0.06  Q     V   |          |          |          |
36+20       0.0652      0.06  Q     V   |          |          |          |
36+25       0.0656      0.06  Q     V   |          |          |          |
36+30       0.0660      0.06  Q     V   |          |          |          |
36+35       0.0665      0.07  Q     V   |          |          |          |
36+40       0.0669      0.07  Q      V  |          |          |          |
36+45       0.0674      0.07  Q      V  |          |          |          |
36+50       0.0679      0.07  Q      V  |          |          |          |
36+55       0.0683      0.07  Q      V  |          |          |          |
37+ 0       0.0688      0.07  Q      V  |          |          |          |
37+ 5       0.0694      0.08  Q      V  |          |          |          |
37+10       0.0699      0.08  Q      V  |          |          |          |
37+15       0.0705      0.08  Q      V  |          |          |          |
37+20       0.0710      0.08  Q      V  |          |          |          |
37+25       0.0716      0.08  Q      V  |          |          |          |
37+30       0.0722      0.08  Q      V  |          |          |          |
37+35       0.0726      0.07  Q      V  |          |          |          |
37+40       0.0730      0.06  Q      V  |          |          |          |
37+45       0.0734      0.06  Q      V  |          |          |          |
37+50       0.0738      0.06  Q      V  |          |          |          |
37+55       0.0742      0.06  Q      V  |          |          |          |
38+ 0       0.0745      0.06  Q      V  |          |          |          |
38+ 5       0.0750      0.06  Q      V  |          |          |          |
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38+10       0.0754      0.06  Q      V  |          |          |          |
38+15       0.0758      0.06  Q      V  |          |          |          |
38+20       0.0763      0.06  Q      V  |          |          |          |
38+25       0.0767      0.06  Q       V |          |          |          |
38+30       0.0771      0.06  Q       V |          |          |          |
38+35       0.0776      0.06  Q       V |          |          |          |
38+40       0.0780      0.06  Q       V |          |          |          |
38+45       0.0784      0.06  Q       V |          |          |          |
38+50       0.0789      0.06  Q       V |          |          |          |
38+55       0.0793      0.06  Q       V |          |          |          |
39+ 0       0.0797      0.06  Q       V |          |          |          |
39+ 5       0.0801      0.06  Q       V |          |          |          |
39+10       0.0805      0.06  Q       V |          |          |          |
39+15       0.0809      0.06  Q       V |          |          |          |
39+20       0.0813      0.06  Q       V |          |          |          |
39+25       0.0816      0.06  Q       V |          |          |          |
39+30       0.0820      0.06  Q       V |          |          |          |
39+35       0.0824      0.05  Q       V |          |          |          |
39+40       0.0827      0.05  Q       V |          |          |          |
39+45       0.0830      0.05  Q       V |          |          |          |
39+50       0.0833      0.05  Q       V |          |          |          |
39+55       0.0836      0.05  Q       V |          |          |          |
40+ 0       0.0839      0.05  Q       V |          |          |          |
40+ 5       0.0841      0.02  Q       V |          |          |          |
40+10       0.0842      0.01  Q       V |          |          |          |
40+15       0.0843      0.01  Q       V |          |          |          |
40+20       0.0843      0.01  Q       V |          |          |          |
40+25       0.0844      0.01  Q       V |          |          |          |
40+30       0.0845      0.01  Q       V |          |          |          |
40+35       0.0845      0.01  Q       V |          |          |          |
40+40       0.0846      0.01  Q       V |          |          |          |
40+45       0.0846      0.01  Q       V |          |          |          |
40+50       0.0847      0.01  Q       V |          |          |          |
40+55       0.0847      0.01  Q       V |          |          |          |
41+ 0       0.0848      0.01  Q       V |          |          |          |
41+ 5       0.0848      0.01  Q       V |          |          |          |
41+10       0.0849      0.01  Q       V |          |          |          |
41+15       0.0850      0.01  Q       V |          |          |          |
41+20       0.0851      0.01  Q       V |          |          |          |
41+25       0.0852      0.01  Q       V |          |          |          |
41+30       0.0852      0.01  Q       V |          |          |          |
41+35       0.0853      0.01  Q       V |          |          |          |
41+40       0.0854      0.01  Q       V |          |          |          |
41+45       0.0855      0.01  Q       V |          |          |          |
41+50       0.0856      0.01  Q       V |          |          |          |
41+55       0.0856      0.01  Q       V |          |          |          |
42+ 0       0.0857      0.01  Q       V |          |          |          |
42+ 5       0.0858      0.01  Q       V |          |          |          |
42+10       0.0858      0.01  Q       V |          |          |          |
42+15       0.0859      0.01  Q        V|          |          |          |
42+20       0.0860      0.01  Q        V|          |          |          |
42+25       0.0860      0.01  Q        V|          |          |          |
42+30       0.0861      0.01  Q        V|          |          |          |
42+35       0.0861      0.01  Q        V|          |          |          |
42+40       0.0862      0.01  Q        V|          |          |          |
42+45       0.0863      0.01  Q        V|          |          |          |
42+50       0.0863      0.01  Q        V|          |          |          |
42+55       0.0863      0.00  Q        V|          |          |          |
43+ 0       0.0864      0.00  Q        V|          |          |          |
43+ 5       0.0864      0.01  Q        V|          |          |          |
43+10       0.0864      0.01  Q        V|          |          |          |
43+15       0.0865      0.01  Q        V|          |          |          |
43+20       0.0866      0.01  Q        V|          |          |          |
43+25       0.0866      0.01  Q        V|          |          |          |
43+30       0.0867      0.01  Q        V|          |          |          |
43+35       0.0867      0.01  Q        V|          |          |          |
43+40       0.0868      0.01  Q        V|          |          |          |
43+45       0.0868      0.01  Q        V|          |          |          |
43+50       0.0869      0.01  Q        V|          |          |          |
43+55       0.0869      0.00  Q        V|          |          |          |
44+ 0       0.0870      0.00  Q        V|          |          |          |
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44+ 5       0.0870      0.01  Q        V|          |          |          |
44+10       0.0870      0.01  Q        V|          |          |          |
44+15       0.0871      0.01  Q        V|          |          |          |
44+20       0.0871      0.01  Q        V|          |          |          |
44+25       0.0872      0.01  Q        V|          |          |          |
44+30       0.0872      0.01  Q        V|          |          |          |
44+35       0.0873      0.01  Q        V|          |          |          |
44+40       0.0873      0.01  Q        V|          |          |          |
44+45       0.0874      0.01  Q        V|          |          |          |
44+50       0.0874      0.01  Q        V|          |          |          |
44+55       0.0875      0.00  Q        V|          |          |          |
45+ 0       0.0875      0.00  Q        V|          |          |          |
45+ 5       0.0875      0.01  Q        V|          |          |          |
45+10       0.0876      0.01  Q        V|          |          |          |
45+15       0.0876      0.01  Q        V|          |          |          |
45+20       0.0877      0.01  Q        V|          |          |          |
45+25       0.0877      0.00  Q        V|          |          |          |
45+30       0.0877      0.00  Q        V|          |          |          |
45+35       0.0878      0.01  Q        V|          |          |          |
45+40       0.0878      0.01  Q        V|          |          |          |
45+45       0.0879      0.01  Q        V|          |          |          |
45+50       0.0879      0.01  Q        V|          |          |          |
45+55       0.0880      0.00  Q        V|          |          |          |
46+ 0       0.0880      0.00  Q        V|          |          |          |
46+ 5       0.0880      0.01  Q        V|          |          |          |
46+10       0.0881      0.01  Q        V|          |          |          |
46+15       0.0881      0.01  Q        V|          |          |          |
46+20       0.0882      0.01  Q        V|          |          |          |
46+25       0.0882      0.00  Q        V|          |          |          |
46+30       0.0882      0.00  Q        V|          |          |          |
46+35       0.0883      0.00  Q        V|          |          |          |
46+40       0.0883      0.00  Q        V|          |          |          |
46+45       0.0883      0.00  Q        V|          |          |          |
46+50       0.0884      0.00  Q        V|          |          |          |
46+55       0.0884      0.00  Q        V|          |          |          |
47+ 0       0.0884      0.00  Q        V|          |          |          |
47+ 5       0.0885      0.00  Q        V|          |          |          |
47+10       0.0885      0.00  Q        V|          |          |          |
47+15       0.0885      0.00  Q        V|          |          |          |
47+20       0.0886      0.00  Q        V|          |          |          |
47+25       0.0886      0.00  Q        V|          |          |          |
47+30       0.0886      0.00  Q        V|          |          |          |
47+35       0.0887      0.00  Q        V|          |          |          |
47+40       0.0887      0.00  Q        V|          |          |          |
47+45       0.0887      0.00  Q        V|          |          |          |
47+50       0.0888      0.00  Q        V|          |          |          |
47+55       0.0888      0.00  Q        V|          |          |          |
48+ 0       0.0888      0.00  Q        V|          |          |          |
48+ 5       0.0889      0.01  Q        V|          |          |          |
48+10       0.0889      0.01  Q        V|          |          |          |
48+15       0.0890      0.01  Q        V|          |          |          |
48+20       0.0891      0.01  Q        V|          |          |          |
48+25       0.0892      0.01  Q        V|          |          |          |
48+30       0.0893      0.01  Q        V|          |          |          |
48+35       0.0894      0.01  Q        V|          |          |          |
48+40       0.0895      0.01  Q        V|          |          |          |
48+45       0.0896      0.01  Q        V|          |          |          |
48+50       0.0897      0.02  Q        V|          |          |          |
48+55       0.0898      0.02  Q        V|          |          |          |
49+ 0       0.0899      0.02  Q        V|          |          |          |
49+ 5       0.0900      0.02  Q        V|          |          |          |
49+10       0.0901      0.01  Q        V|          |          |          |
49+15       0.0902      0.01  Q        V|          |          |          |
49+20       0.0903      0.01  Q        V|          |          |          |
49+25       0.0904      0.01  Q        V|          |          |          |
49+30       0.0905      0.01  Q        V|          |          |          |
49+35       0.0906      0.01  Q        V|          |          |          |
49+40       0.0907      0.01  Q        V|          |          |          |
49+45       0.0908      0.01  Q        V|          |          |          |
49+50       0.0909      0.02  Q        V|          |          |          |
49+55       0.0910      0.02  Q        V|          |          |          |
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50+ 0       0.0911      0.02  Q        V|         |         |         |
50+ 5       0.0913      0.02  Q        V|         |         |         |
50+10       0.0914      0.02  Q        V|         |         |         |
50+15       0.0915      0.02  Q        V|         |         |         |
50+20       0.0916      0.02  Q        V|         |         |         |
50+25       0.0918      0.02  Q        V|         |         |         |
50+30       0.0919      0.02  Q        V|         |         |         |
50+35       0.0920      0.02  Q        V|         |         |         |
50+40       0.0922      0.02  Q        V|         |         |         |
50+45       0.0923      0.02  Q        V|         |         |         |
50+50       0.0925      0.02  Q        V|         |         |         |
50+55       0.0927      0.02  Q        V|         |         |         |
51+ 0       0.0928      0.02  Q        V|         |         |         |
51+ 5       0.0930      0.02  Q        V|         |         |         |
51+10       0.0931      0.02  Q        V|         |         |         |
51+15       0.0933      0.02  Q        V|         |         |         |
51+20       0.0934      0.02  Q        V|         |         |         |
51+25       0.0936      0.02  Q        V|         |         |         |
51+30       0.0938      0.02  Q        V|         |         |         |
51+35       0.0939      0.02  Q        V|         |         |         |
51+40       0.0941      0.02  Q        V|         |         |         |
51+45       0.0942      0.02  Q        V|         |         |         |
51+50       0.0944      0.03  Q        V|         |         |         |
51+55       0.0946      0.03  Q        V|         |         |         |
52+ 0       0.0948      0.03  Q        V|         |         |         |
52+ 5       0.0950      0.03  Q        V|         |         |         |
52+10       0.0952      0.03  Q        V|         |         |         |
52+15       0.0953      0.03  Q        V|         |         |         |
52+20       0.0955      0.03  Q         V         |         |         |
52+25       0.0958      0.03  Q         V         |         |         |
52+30       0.0960      0.03  Q         V         |         |         |
52+35       0.0962      0.03  Q         V         |         |         |
52+40       0.0964      0.03  Q         V         |         |         |
52+45       0.0966      0.03  Q         V         |         |         |
52+50       0.0969      0.03  Q         V         |         |         |
52+55       0.0971      0.04  Q         V         |         |         |
53+ 0       0.0974      0.04  Q         V         |         |         |
53+ 5       0.0976      0.03  Q         V         |         |         |
53+10       0.0978      0.03  Q         V         |         |         |
53+15       0.0980      0.03  Q         V         |         |         |
53+20       0.0982      0.03  Q         V         |         |         |
53+25       0.0984      0.03  Q         V         |         |         |
53+30       0.0986      0.03  Q         V         |         |         |
53+35       0.0989      0.03  Q         V         |         |         |
53+40       0.0991      0.04  Q         V         |         |         |
53+45       0.0994      0.04  Q         V         |         |         |
53+50       0.0996      0.04  Q         V         |         |         |
53+55       0.0999      0.04  Q         V         |         |         |
54+ 0       0.1001      0.04  Q         V         |         |         |
54+ 5       0.1004      0.04  Q         V         |         |         |
54+10       0.1007      0.04  Q         V         |         |         |
54+15       0.1009      0.04  Q         V         |         |         |
54+20       0.1012      0.04  Q         V         |         |         |
54+25       0.1015      0.04  Q         V         |         |         |
54+30       0.1018      0.04  Q         V         |         |         |
54+35       0.1021      0.04  Q         V         |         |         |
54+40       0.1024      0.05  Q         V         |         |         |
54+45       0.1027      0.05  Q         V         |         |         |
54+50       0.1030      0.05  Q         V         |         |         |
54+55       0.1033      0.05  Q         V         |         |         |
55+ 0       0.1037      0.05  Q         V         |         |         |
55+ 5       0.1040      0.05  Q         V         |         |         |
55+10       0.1043      0.05  Q         V         |         |         |
55+15       0.1046      0.05  Q         V         |         |         |
55+20       0.1049      0.05  Q         |V        |         |         |
55+25       0.1053      0.05  Q         |V        |         |         |
55+30       0.1056      0.05  Q         |V        |         |         |
55+35       0.1060      0.05  Q         |V        |         |         |
55+40       0.1064      0.05  Q         |V        |         |         |
55+45       0.1067      0.05  Q         |V        |         |         |
55+50       0.1071      0.06  Q         |V        |         |         |
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55+55       0.1075      0.06  Q          |V         |          |          |
56+ 0       0.1079      0.06  Q          |V         |          |          |
56+ 5       0.1084      0.06  Q          |V         |          |          |
56+10       0.1089      0.07  Q          |V         |          |          |
56+15       0.1093      0.07  Q          |V         |          |          |
56+20       0.1098      0.07  Q          |V         |          |          |
56+25       0.1103      0.07  Q          |V         |          |          |
56+30       0.1107      0.07  Q          |V         |          |          |
56+35       0.1112      0.07  Q          |V         |          |          |
56+40       0.1117      0.07  Q          |V         |          |          |
56+45       0.1122      0.07  Q          |V         |          |          |
56+50       0.1128      0.08  Q          |V         |          |          |
56+55       0.1133      0.08  Q          |V         |          |          |
57+ 0       0.1138      0.08  Q          |V         |          |          |
57+ 5       0.1144      0.08  Q          |V         |          |          |
57+10       0.1150      0.09  Q          | V        |          |          |
57+15       0.1156      0.09  Q          | V        |          |          |
57+20       0.1162      0.09  Q          | V        |          |          |
57+25       0.1168      0.09  Q          | V        |          |          |
57+30       0.1174      0.09  Q          | V        |          |          |
57+35       0.1181      0.09  Q          | V        |          |          |
57+40       0.1188      0.10  Q          | V        |          |          |
57+45       0.1194      0.10  Q          | V        |          |          |
57+50       0.1201      0.10  Q          | V        |          |          |
57+55       0.1208      0.10  Q          | V        |          |          |
58+ 0       0.1215      0.10  Q          | V        |          |          |
58+ 5       0.1220      0.08  Q          | V        |          |          |
58+10       0.1225      0.07  Q          | V        |          |          |
58+15       0.1230      0.07  Q          | V        |          |          |
58+20       0.1234      0.07  Q          | V        |          |          |
58+25       0.1239      0.07  Q          | V        |          |          |
58+30       0.1244      0.07  Q          |  V       |          |          |
58+35       0.1250      0.08  Q          |  V       |          |          |
58+40       0.1256      0.09  Q          |  V       |          |          |
58+45       0.1262      0.09  Q          |  V       |          |          |
58+50       0.1268      0.09  Q          |  V       |          |          |
58+55       0.1275      0.09  Q          |  V       |          |          |
59+ 0       0.1281      0.09  Q          |  V       |          |          |
59+ 5       0.1287      0.09  Q          |  V       |          |          |
59+10       0.1293      0.09  Q          |  V       |          |          |
59+15       0.1299      0.09  Q          |  V       |          |          |
59+20       0.1305      0.09  Q          |  V       |          |          |
59+25       0.1311      0.09  Q          |  V       |          |          |
59+30       0.1317      0.09  Q          |  V       |          |          |
59+35       0.1322      0.08  Q          |  V       |          |          |
59+40       0.1328      0.08  Q          |  V       |          |          |
59+45       0.1333      0.08  Q          |  V       |          |          |
59+50       0.1338      0.08  Q          |   V      |          |          |
59+55       0.1344      0.08  Q          |   V      |          |          |
60+ 0       0.1350      0.08  Q          |   V      |          |          |
60+ 5       0.1353      0.04  Q          |   V      |          |          |
60+10       0.1354      0.02  Q          |   V      |          |          |
60+15       0.1355      0.01  Q          |   V      |          |          |
60+20       0.1356      0.02  Q          |   V      |          |          |
60+25       0.1357      0.02  Q          |   V      |          |          |
60+30       0.1359      0.02  Q          |   V      |          |          |
60+35       0.1361      0.03  Q          |   V      |          |          |
60+40       0.1363      0.04  Q          |   V      |          |          |
60+45       0.1366      0.04  Q          |   V      |          |          |
60+50       0.1369      0.04  Q          |   V      |          |          |
60+55       0.1372      0.04  Q          |   V      |          |          |
61+ 0       0.1375      0.05  Q          |   V      |          |          |
61+ 5       0.1379      0.06  Q          |   V      |          |          |
61+10       0.1385      0.08  Q          |   V      |          |          |
61+15       0.1390      0.08  Q          |   V      |          |          |
61+20       0.1396      0.08  Q          |   V      |          |          |
61+25       0.1401      0.08  Q          |   V      |          |          |
61+30       0.1407      0.08  Q          |   V      |          |          |
61+35       0.1409      0.04  Q          |   V      |          |          |
61+40       0.1410      0.02  Q          |   V      |          |          |
61+45       0.1411      0.01  Q          |   V      |          |          |
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61+50       0.1412      0.01  Q          |   V     |          |          |
61+55       0.1413      0.01  Q          |   V     |          |          |
62+ 0       0.1414      0.02  Q          |   V     |          |          |
62+ 5       0.1417      0.03  Q          |   V     |          |          |
62+10       0.1419      0.04  Q          |   V     |          |          |
62+15       0.1422      0.04  Q          |   V     |          |          |
62+20       0.1425      0.04  Q          |   V     |          |          |
62+25       0.1428      0.04  Q          |   V     |          |          |
62+30       0.1430      0.04  Q          |   V     |          |          |
62+35       0.1433      0.04  Q          |    V    |          |          |
62+40       0.1436      0.04  Q          |    V    |          |          |
62+45       0.1439      0.04  Q          |    V    |          |          |
62+50       0.1441      0.04  Q          |    V    |          |          |
62+55       0.1444      0.04  Q          |    V    |          |          |
63+ 0       0.1446      0.04  Q          |    V    |          |          |
63+ 5       0.1448      0.03  Q          |    V    |          |          |
63+10       0.1450      0.03  Q          |    V    |          |          |
63+15       0.1453      0.03  Q          |    V    |          |          |
63+20       0.1455      0.03  Q          |    V    |          |          |
63+25       0.1456      0.03  Q          |    V    |          |          |
63+30       0.1458      0.03  Q          |    V    |          |          |
63+35       0.1459      0.01  Q          |    V    |          |          |
63+40       0.1459      0.00  Q          |    V    |          |          |
63+45       0.1460      0.00  Q          |    V    |          |          |
63+50       0.1460      0.00  Q          |    V    |          |          |
63+55       0.1460      0.00  Q          |    V    |          |          |
64+ 0       0.1461      0.01  Q          |    V    |          |          |
64+ 5       0.1462      0.01  Q          |    V    |          |          |
64+10       0.1463      0.02  Q          |    V    |          |          |
64+15       0.1464      0.02  Q          |    V    |          |          |
64+20       0.1465      0.02  Q          |    V    |          |          |
64+25       0.1467      0.02  Q          |    V    |          |          |
64+30       0.1468      0.02  Q          |    V    |          |          |
64+35       0.1469      0.02  Q          |    V    |          |          |
64+40       0.1470      0.01  Q          |    V    |          |          |
64+45       0.1471      0.01  Q          |    V    |          |          |
64+50       0.1472      0.01  Q          |    V    |          |          |
64+55       0.1473      0.01  Q          |    V    |          |          |
65+ 0       0.1474      0.01  Q          |    V    |          |          |
65+ 5       0.1475      0.02  Q          |    V    |          |          |
65+10       0.1476      0.02  Q          |    V    |          |          |
65+15       0.1478      0.02  Q          |    V    |          |          |
65+20       0.1480      0.02  Q          |    V    |          |          |
65+25       0.1481      0.02  Q          |    V    |          |          |
65+30       0.1483      0.02  Q          |    V    |          |          |
65+35       0.1484      0.02  Q          |    V    |          |          |
65+40       0.1486      0.02  Q          |    V    |          |          |
65+45       0.1487      0.02  Q          |    V    |          |          |
65+50       0.1489      0.02  Q          |    V    |          |          |
65+55       0.1490      0.02  Q          |    V    |          |          |
66+ 0       0.1491      0.02  Q          |    V    |          |          |
66+ 5       0.1493      0.02  Q          |    V    |          |          |
66+10       0.1494      0.02  Q          |    V    |          |          |
66+15       0.1495      0.02  Q          |    V    |          |          |
66+20       0.1496      0.02  Q          |    V    |          |          |
66+25       0.1498      0.02  Q          |    V    |          |          |
66+30       0.1499      0.02  Q          |    V    |          |          |
66+35       0.1500      0.02  Q          |    V    |          |          |
66+40       0.1501      0.01  Q          |    V    |          |          |
66+45       0.1502      0.01  Q          |    V    |          |          |
66+50       0.1503      0.01  Q          |    V    |          |          |
66+55       0.1503      0.01  Q          |    V    |          |          |
67+ 0       0.1504      0.01  Q          |    V    |          |          |
67+ 5       0.1505      0.01  Q          |    V    |          |          |
67+10       0.1506      0.01  Q          |    V    |          |          |
67+15       0.1507      0.01  Q          |    V    |          |          |
67+20       0.1508      0.02  Q          |    V    |          |          |
67+25       0.1509      0.02  Q          |    V    |          |          |
67+30       0.1510      0.02  Q          |    V    |          |          |
67+35       0.1511      0.02  Q          |    V    |          |          |
67+40       0.1512      0.01  Q          |    V    |          |          |
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67+45       0.1513      0.01  Q          |     V    |          |          |
67+50       0.1514      0.01  Q          |     V    |          |          |
67+55       0.1515      0.01  Q          |     V    |          |          |
68+ 0       0.1515      0.01  Q          |     V    |          |          |
68+ 5       0.1516      0.01  Q          |     V    |          |          |
68+10       0.1517      0.01  Q          |     V    |          |          |
68+15       0.1518      0.01  Q          |     V    |          |          |
68+20       0.1519      0.01  Q          |     V    |          |          |
68+25       0.1520      0.01  Q          |     V    |          |          |
68+30       0.1521      0.01  Q          |     V    |          |          |
68+35       0.1522      0.01  Q          |     V    |          |          |
68+40       0.1523      0.01  Q          |     V    |          |          |
68+45       0.1523      0.01  Q          |     V    |          |          |
68+50       0.1524      0.01  Q          |     V    |          |          |
68+55       0.1525      0.01  Q          |     V    |          |          |
69+ 0       0.1526      0.01  Q          |     V    |          |          |
69+ 5       0.1526      0.01  Q          |      V   |          |          |
69+10       0.1527      0.01  Q          |      V   |          |          |
69+15       0.1528      0.01  Q          |      V   |          |          |
69+20       0.1529      0.01  Q          |      V   |          |          |
69+25       0.1530      0.01  Q          |      V   |          |          |
69+30       0.1530      0.01  Q          |      V   |          |          |
69+35       0.1531      0.01  Q          |      V   |          |          |
69+40       0.1532      0.01  Q          |      V   |          |          |
69+45       0.1533      0.01  Q          |      V   |          |          |
69+50       0.1534      0.01  Q          |      V   |          |          |
69+55       0.1534      0.01  Q          |      V   |          |          |
70+ 0       0.1535      0.01  Q          |      V   |          |          |
70+ 5       0.1536      0.01  Q          |      V   |          |          |
70+10       0.1537      0.01  Q          |      V   |          |          |
70+15       0.1538      0.01  Q          |      V   |          |          |
70+20       0.1538      0.01  Q          |      V   |          |          |
70+25       0.1539      0.01  Q          |      V   |          |          |
70+30       0.1540      0.01  Q          |      V   |          |          |
70+35       0.1540      0.01  Q          |      V   |          |          |
70+40       0.1541      0.01  Q          |      V   |          |          |
70+45       0.1542      0.01  Q          |      V   |          |          |
70+50       0.1542      0.01  Q          |      V   |          |          |
70+55       0.1543      0.01  Q          |      V   |          |          |
71+ 0       0.1543      0.01  Q          |      V   |          |          |
71+ 5       0.1544      0.01  Q          |      V   |          |          |
71+10       0.1545      0.01  Q          |      V   |          |          |
71+15       0.1545      0.01  Q          |      V   |          |          |
71+20       0.1546      0.01  Q          |      V   |          |          |
71+25       0.1547      0.01  Q          |      V   |          |          |
71+30       0.1547      0.01  Q          |      V   |          |          |
71+35       0.1548      0.01  Q          |      V   |          |          |
71+40       0.1548      0.01  Q          |      V   |          |          |
71+45       0.1549      0.01  Q          |      V   |          |          |
71+50       0.1550      0.01  Q          |      V   |          |          |
71+55       0.1550      0.01  Q          |      V   |          |          |
72+ 0       0.1551      0.01  Q          |      V   |          |          |
72+ 5       0.1552      0.02  Q          |      V   |          |          |
72+10       0.1554      0.02  Q          |      V   |          |          |
72+15       0.1555      0.03  Q          |      V   |          |          |
72+20       0.1558      0.03  Q          |      V   |          |          |
72+25       0.1560      0.04  Q          |      V   |          |          |
72+30       0.1563      0.04  Q          |      V   |          |          |
72+35       0.1565      0.04  Q          |      V   |          |          |
72+40       0.1568      0.04  Q          |      V   |          |          |
72+45       0.1571      0.04  Q          |      V   |          |          |
72+50       0.1574      0.05  Q          |      V   |          |          |
72+55       0.1577      0.05  Q          |      V   |          |          |
73+ 0       0.1581      0.05  Q          |      V   |          |          |
73+ 5       0.1584      0.04  Q          |      V   |          |          |
73+10       0.1586      0.04  Q          |      V   |          |          |
73+15       0.1589      0.04  Q          |      V   |          |          |
73+20       0.1592      0.04  Q          |      V   |          |          |
73+25       0.1594      0.04  Q          |      V   |          |          |
73+30       0.1597      0.04  Q          |      V   |          |          |
73+35       0.1599      0.04  Q          |      V   |          |          |
```

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73+40       0.1602      0.04  Q          |     V   |          |          |
73+45       0.1605      0.04  Q          |     V   |          |          |
73+50       0.1608      0.05  Q          |     V   |          |          |
73+55       0.1611      0.05  Q          |     V   |          |          |
74+ 0       0.1615      0.05  Q          |     V   |          |          |
74+ 5       0.1618      0.05  Q          |     V   |          |          |
74+10       0.1622      0.05  Q          |      V  |          |          |
74+15       0.1625      0.05  Q          |      V  |          |          |
74+20       0.1629      0.05  Q          |      V  |          |          |
74+25       0.1632      0.05  Q          |      V  |          |          |
74+30       0.1636      0.05  Q          |      V  |          |          |
74+35       0.1640      0.06  Q          |      V  |          |          |
74+40       0.1644      0.06  Q          |      V  |          |          |
74+45       0.1648      0.06  Q          |      V  |          |          |
74+50       0.1653      0.06  Q          |      V  |          |          |
74+55       0.1657      0.06  Q          |      V  |          |          |
75+ 0       0.1661      0.06  Q          |      V  |          |          |
75+ 5       0.1666      0.06  Q          |      V  |          |          |
75+10       0.1670      0.06  Q          |      V  |          |          |
75+15       0.1674      0.06  Q          |      V  |          |          |
75+20       0.1679      0.06  Q          |      V  |          |          |
75+25       0.1683      0.06  Q          |      V  |          |          |
75+30       0.1688      0.06  Q          |      V  |          |          |
75+35       0.1692      0.06  Q          |      V  |          |          |
75+40       0.1696      0.06  Q          |      V  |          |          |
75+45       0.1701      0.06  Q          |      V  |          |          |
75+50       0.1705      0.07  Q          |      V  |          |          |
75+55       0.1711      0.08  Q          |      V  |          |          |
76+ 0       0.1716      0.08  Q          |      V  |          |          |
76+ 5       0.1721      0.08  Q          |       V |          |          |
76+10       0.1726      0.08  Q          |       V |          |          |
76+15       0.1732      0.08  Q          |       V |          |          |
76+20       0.1737      0.08  Q          |       V |          |          |
76+25       0.1743      0.09  Q          |       V |          |          |
76+30       0.1749      0.09  Q          |       V |          |          |
76+35       0.1756      0.09  Q          |       V |          |          |
76+40       0.1762      0.09  Q          |       V |          |          |
76+45       0.1768      0.09  Q          |       V |          |          |
76+50       0.1774      0.10  Q          |       V |          |          |
76+55       0.1781      0.10  Q          |       V |          |          |
77+ 0       0.1788      0.10  Q          |       V |          |          |
77+ 5       0.1794      0.09  Q          |       V |          |          |
77+10       0.1800      0.08  Q          |       V |          |          |
77+15       0.1805      0.08  Q          |       V |          |          |
77+20       0.1810      0.08  Q          |       V |          |          |
77+25       0.1817      0.09  Q          |        V|          |          |
77+30       0.1823      0.09  Q          |        V|          |          |
77+35       0.1829      0.10  Q          |        V|          |          |
77+40       0.1836      0.10  Q          |        V|          |          |
77+45       0.1843      0.10  Q          |        V|          |          |
77+50       0.1850      0.10  Q          |        V|          |          |
77+55       0.1857      0.10  Q          |        V|          |          |
78+ 0       0.1864      0.10  Q          |        V|          |          |
78+ 5       0.1872      0.11  Q          |        V|          |          |
78+10       0.1879      0.11  Q          |        V|          |          |
78+15       0.1887      0.11  Q          |        V|          |          |
78+20       0.1895      0.11  Q          |        V|          |          |
78+25       0.1903      0.11  Q          |        V|          |          |
78+30       0.1911      0.11  Q          |         V          |          |
78+35       0.1919      0.12  Q          |         V          |          |
78+40       0.1928      0.13  Q          |         V          |          |
78+45       0.1936      0.13  Q          |         V          |          |
78+50       0.1945      0.13  Q          |         V          |          |
78+55       0.1954      0.13  Q          |         V          |          |
79+ 0       0.1963      0.13  Q          |         V          |          |
79+ 5       0.1971      0.13  Q          |         V          |          |
79+10       0.1980      0.13  Q          |         V          |          |
79+15       0.1989      0.13  Q          |         V          |          |
79+20       0.1992      0.05  Q          |         V          |          |
79+25       0.1993      0.01  Q          |         V          |          |
79+30       0.1993      0.00  Q          |         V          |          |
```

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79+35       0.1994      0.01  Q          |          V          |          |
79+40       0.1996      0.02  Q          |          V          |          |
79+45       0.1997      0.02  Q          |          V          |          |
79+50       0.2000      0.03  Q          |          V          |          |
79+55       0.2002      0.04  Q          |          V          |          |
80+ 0       0.2005      0.04  Q          |          |V         |          |
80+ 5       0.2010      0.07  Q          |          |V         |          |
80+10       0.2015      0.08  Q          |          |V         |          |
80+15       0.2021      0.08  Q          |          |V         |          |
80+20       0.2026      0.08  Q          |          |V         |          |
80+25       0.2032      0.08  Q          |          |V         |          |
80+30       0.2038      0.08  Q          |          |V         |          |
80+35       0.2044      0.09  Q          |          |V         |          |
80+40       0.2051      0.10  Q          |          |V         |          |
80+45       0.2059      0.10  Q          |          |V         |          |
80+50       0.2066      0.11  Q          |          |V         |          |
80+55       0.2075      0.12  Q          |          |V         |          |
81+ 0       0.2083      0.12  Q          |          |V         |          |
81+ 5       0.2093      0.15  Q          |          |V         |          |
81+10       0.2104      0.16  Q          |          | V        |          |
81+15       0.2115      0.16  Q          |          | V        |          |
81+20       0.2127      0.17  Q          |          | V        |          |
81+25       0.2139      0.18  Q          |          | V        |          |
81+30       0.2152      0.18  Q          |          | V        |          |
81+35       0.2165      0.19  Q          |          | V        |          |
81+40       0.2179      0.20  Q          |          | V        |          |
81+45       0.2193      0.20  Q          |          | V        |          |
81+50       0.2207      0.21  Q          |          |  V       |          |
81+55       0.2222      0.22  Q          |          |  V       |          |
82+ 0       0.2237      0.22  Q          |          |  V       |          |
82+ 5       0.2248      0.15  Q          |          |  V       |          |
82+10       0.2255      0.11  Q          |          |  V       |          |
82+15       0.2262      0.10  Q          |          |  V       |          |
82+20       0.2269      0.10  Q          |          |  V       |          |
82+25       0.2276      0.10  Q          |          |  V       |          |
82+30       0.2283      0.10  Q          |          |  V       |          |
82+35       0.2294      0.16  Q          |          |   V      |          |
82+40       0.2306      0.19  Q          |          |   V      |          |
82+45       0.2320      0.19  Q          |          |   V      |          |
82+50       0.2333      0.19  Q          |          |   V      |          |
82+55       0.2346      0.19  Q          |          |   V      |          |
83+ 0       0.2360      0.19  Q          |          |   V      |          |
83+ 5       0.2373      0.19  Q          |          |   V      |          |
83+10       0.2385      0.18  Q          |          |    V     |          |
83+15       0.2397      0.18  Q          |          |    V     |          |
83+20       0.2410      0.18  Q          |          |    V     |          |
83+25       0.2422      0.18  Q          |          |    V     |          |
83+30       0.2435      0.18  Q          |          |    V     |          |
83+35       0.2446      0.16  Q          |          |    V     |          |
83+40       0.2456      0.15  Q          |          |    V     |          |
83+45       0.2466      0.15  Q          |          |    V     |          |
83+50       0.2477      0.16  Q          |          |    V     |          |
83+55       0.2489      0.17  Q          |          |     V    |          |
84+ 0       0.2501      0.17  Q          |          |     V    |          |
84+ 5       0.2517      0.24  Q          |          |     V    |          |
84+10       0.2537      0.29  |Q         |          |     V    |          |
84+15       0.2557      0.29  |Q         |          |     V    |          |
84+20       0.2578      0.30  |Q         |          |      V   |          |
84+25       0.2600      0.31  |Q         |          |      V   |          |
84+30       0.2621      0.31  |Q         |          |      V   |          |
84+35       0.2644      0.33  |Q         |          |      V   |          |
84+40       0.2668      0.35  |Q         |          |      V   |          |
84+45       0.2692      0.35  |Q         |          |       V  |          |
84+50       0.2717      0.36  |Q         |          |       V  |          |
84+55       0.2743      0.37  |Q         |          |       V  |          |
85+ 0       0.2768      0.37  |Q         |          |        V|          |
85+ 5       0.2797      0.42  |Q         |          |        V|          |
85+10       0.2828      0.45  |Q         |          |        V|          |
85+15       0.2860      0.46  |Q         |          |        V|          |
85+20       0.2892      0.46  |Q         |          |         V          |
85+25       0.2923      0.46  |Q         |          |         V          |
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85+30       0.2955      0.46  |Q         |          |          V          |
85+35       0.2979      0.35  |Q         |          |          |V         |
85+40       0.2998      0.28  |Q         |          |          |V         |
85+45       0.3017      0.27  |Q         |          |          |V         |
85+50       0.3035      0.27  |Q         |          |          |V         |
85+55       0.3054      0.27  |Q         |          |          | V        |
86+ 0       0.3073      0.27  |Q         |          |          | V        |
86+ 5       0.3095      0.32  |Q         |          |          | V        |
86+10       0.3118      0.34  |Q         |          |          | V        |
86+15       0.3142      0.34  |Q         |          |          | V        |
86+20       0.3165      0.33  |Q         |          |          |  V       |
86+25       0.3188      0.33  |Q         |          |          |  V       |
86+30       0.3210      0.33  |Q         |          |          |  V       |
86+35       0.3233      0.33  |Q         |          |          |  V       |
86+40       0.3256      0.33  |Q         |          |          |   V      |
86+45       0.3279      0.33  |Q         |          |          |   V      |
86+50       0.3301      0.32  |Q         |          |          |   V      |
86+55       0.3322      0.32  |Q         |          |          |   V      |
87+ 0       0.3344      0.32  |Q         |          |          |    V     |
87+ 5       0.3365      0.31  |Q         |          |          |    V     |
87+10       0.3386      0.30  |Q         |          |          |    V     |
87+15       0.3407      0.30  |Q         |          |          |    V     |
87+20       0.3427      0.29  |Q         |          |          |    V     |
87+25       0.3446      0.28  |Q         |          |          |     V    |
87+30       0.3466      0.28  |Q         |          |          |     V    |
87+35       0.3482      0.24  Q          |          |          |     V    |
87+40       0.3498      0.22  Q          |          |          |     V    |
87+45       0.3512      0.22  Q          |          |          |     V    |
87+50       0.3527      0.22  Q          |          |          |     V    |
87+55       0.3542      0.22  Q          |          |          |      V   |
88+ 0       0.3557      0.22  Q          |          |          |      V   |
88+ 5       0.3565      0.12  Q          |          |          |      V   |
88+10       0.3569      0.06  Q          |          |          |      V   |
88+15       0.3573      0.05  Q          |          |          |      V   |
88+20       0.3576      0.05  Q          |          |          |      V   |
88+25       0.3580      0.05  Q          |          |          |      V   |
88+30       0.3583      0.05  Q          |          |          |      V   |
88+35       0.3586      0.04  Q          |          |          |      V   |
88+40       0.3589      0.04  Q          |          |          |      V   |
88+45       0.3592      0.04  Q          |          |          |      V   |
88+50       0.3594      0.04  Q          |          |          |      V   |
88+55       0.3597      0.04  Q          |          |          |      V   |
89+ 0       0.3599      0.04  Q          |          |          |      V   |
89+ 5       0.3603      0.05  Q          |          |          |      V   |
89+10       0.3607      0.06  Q          |          |          |      V   |
89+15       0.3612      0.06  Q          |          |          |      V   |
89+20       0.3616      0.06  Q          |          |          |      V   |
89+25       0.3620      0.06  Q          |          |          |      V   |
89+30       0.3625      0.06  Q          |          |          |       V  |
89+35       0.3629      0.06  Q          |          |          |       V  |
89+40       0.3633      0.06  Q          |          |          |       V  |
89+45       0.3638      0.06  Q          |          |          |       V  |
89+50       0.3642      0.06  Q          |          |          |       V  |
89+55       0.3645      0.05  Q          |          |          |       V  |
90+ 0       0.3649      0.05  Q          |          |          |       V  |
90+ 5       0.3652      0.05  Q          |          |          |       V  |
90+10       0.3656      0.05  Q          |          |          |       V  |
90+15       0.3659      0.05  Q          |          |          |       V  |
90+20       0.3663      0.05  Q          |          |          |       V  |
90+25       0.3666      0.05  Q          |          |          |       V  |
90+30       0.3670      0.05  Q          |          |          |       V  |
90+35       0.3673      0.04  Q          |          |          |       V  |
90+40       0.3675      0.04  Q          |          |          |       V  |
90+45       0.3678      0.04  Q          |          |          |       V  |
90+50       0.3680      0.03  Q          |          |          |       V  |
90+55       0.3682      0.03  Q          |          |          |       V  |
91+ 0       0.3683      0.03  Q          |          |          |       V  |
91+ 5       0.3686      0.03  Q          |          |          |       V  |
91+10       0.3688      0.04  Q          |          |          |       V  |
91+15       0.3691      0.04  Q          |          |          |       V  |
91+20       0.3694      0.05  Q          |          |          |       V  |
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  91+25       0.3697      0.05  Q          |          |          |        V |
  91+30       0.3701      0.05  Q          |          |          |        V |
  91+35       0.3704      0.04  Q          |          |          |        V |
  91+40       0.3707      0.04  Q          |          |          |        V |
  91+45       0.3709      0.04  Q          |          |          |        V |
  91+50       0.3711      0.03  Q          |          |          |        V |
  91+55       0.3713      0.03  Q          |          |          |        V |
  92+ 0       0.3715      0.03  Q          |          |          |        V |
  92+ 5       0.3717      0.03  Q          |          |          |        V |
  92+10       0.3720      0.04  Q          |          |          |         V|
  92+15       0.3722      0.04  Q          |          |          |         V|
  92+20       0.3725      0.04  Q          |          |          |         V|
  92+25       0.3727      0.04  Q          |          |          |         V|
  92+30       0.3730      0.04  Q          |          |          |         V|
  92+35       0.3733      0.04  Q          |          |          |         V|
  92+40       0.3735      0.04  Q          |          |          |         V|
  92+45       0.3738      0.04  Q          |          |          |         V|
  92+50       0.3740      0.03  Q          |          |          |         V|
  92+55       0.3742      0.03  Q          |          |          |         V|
  93+ 0       0.3744      0.03  Q          |          |          |         V|
  93+ 5       0.3746      0.03  Q          |          |          |         V|
  93+10       0.3748      0.04  Q          |          |          |         V|
  93+15       0.3751      0.04  Q          |          |          |         V|
  93+20       0.3753      0.03  Q          |          |          |         V|
  93+25       0.3755      0.03  Q          |          |          |         V|
  93+30       0.3757      0.03  Q          |          |          |         V|
  93+35       0.3759      0.03  Q          |          |          |         V|
  93+40       0.3761      0.04  Q          |          |          |         V|
  93+45       0.3764      0.04  Q          |          |          |         V|
  93+50       0.3766      0.03  Q          |          |          |         V|
  93+55       0.3768      0.03  Q          |          |          |         V|
  94+ 0       0.3770      0.03  Q          |          |          |         V|
  94+ 5       0.3772      0.03  Q          |          |          |         V|
  94+10       0.3775      0.04  Q          |          |          |         V|
  94+15       0.3777      0.04  Q          |          |          |         V|
  94+20       0.3779      0.03  Q          |          |          |         V|
  94+25       0.3781      0.03  Q          |          |          |         V|
  94+30       0.3783      0.03  Q          |          |          |         V|
  94+35       0.3785      0.03  Q          |          |          |         V|
  94+40       0.3786      0.03  Q          |          |          |         V|
  94+45       0.3788      0.03  Q          |          |          |         V|
  94+50       0.3790      0.03  Q          |          |          |         V|
  94+55       0.3791      0.03  Q          |          |          |         V|
  95+ 0       0.3793      0.03  Q          |          |          |         V|
  95+ 5       0.3795      0.03  Q          |          |          |         V|
  95+10       0.3797      0.03  Q          |          |          |         V|
  95+15       0.3798      0.03  Q          |          |          |         V|
  95+20       0.3800      0.03  Q          |          |          |         V|
  95+25       0.3802      0.03  Q          |          |          |         V|
  95+30       0.3804      0.03  Q          |          |          |         V|
  95+35       0.3805      0.03  Q          |          |          |         V|
  95+40       0.3807      0.03  Q          |          |          |         V|
  95+45       0.3809      0.03  Q          |          |          |         V|
  95+50       0.3811      0.03  Q          |          |          |         V|
  95+55       0.3812      0.03  Q          |          |          |         V|
  96+ 0       0.3814      0.03  Q          |          |          |         V|
  96+ 5       0.3815      0.01  Q          |          |          |         V|
  96+10       0.3815      0.00  Q          |          |          |          V
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```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: BEAUMONTDEV3100.out


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----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
100 YEAR, 3 HOUR STORM
DEVELOPED CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     525.00(Ft.)
Length along longest watercourse measured to centroid =     345.00(Ft.)
Length along longest watercourse =      0.099 Mi.
Length along longest watercourse measured to centroid =      0.065 Mi.
Difference in elevation =       5.44(Ft.)
Slope along watercourse =     54.7109 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.025 Hr.
Lag time =     1.49 Min.
25% of lag time =     0.37 Min.
40% of lag time =     0.60 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           0.97                  0.98

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.54                  2.57

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.971(In)
Area Averaged 100-Year Rainfall =    2.540(In)

Point rain (area averaged) =    2.540(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.540(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           56.00         0.780
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	56.0	0.511	0.780	0.152	1.000	0.152
					Sum (F) =	0.152

Area averaged mean soil loss (F) (In/Hr) = 0.152
Minimum soil loss rate ((In/Hr)) = 0.076
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.276

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	335.676	60.069	0.611
2	0.167	671.352	35.248	0.359
3	0.250	1007.028	4.683	0.048
		Sum =	100.000	Sum= 1.018

Storm Event 4 Effective Rainfall = 0.381(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.059	0.152	0.016	0.04
2	0.17	1.30	0.059	0.152	0.016	0.04
3	0.25	1.10	0.050	0.152	0.014	0.04
4	0.33	1.50	0.069	0.152	0.019	0.05
5	0.42	1.50	0.069	0.152	0.019	0.05
6	0.50	1.80	0.082	0.152	0.023	0.06
7	0.58	1.50	0.069	0.152	0.019	0.05
8	0.67	1.80	0.082	0.152	0.023	0.06
9	0.75	1.80	0.082	0.152	0.023	0.06
10	0.83	1.50	0.069	0.152	0.019	0.05
11	0.92	1.60	0.073	0.152	0.020	0.05
12	1.00	1.80	0.082	0.152	0.023	0.06
13	1.08	2.20	0.101	0.152	0.028	0.07
14	1.17	2.20	0.101	0.152	0.028	0.07
15	1.25	2.20	0.101	0.152	0.028	0.07
16	1.33	2.00	0.091	0.152	0.025	0.07
17	1.42	2.60	0.119	0.152	0.033	0.09
18	1.50	2.70	0.123	0.152	0.034	0.09
19	1.58	2.40	0.110	0.152	0.030	0.08
20	1.67	2.70	0.123	0.152	0.034	0.09
21	1.75	3.30	0.151	0.152	0.042	0.11
22	1.83	3.10	0.142	0.152	0.039	0.10
23	1.92	2.90	0.133	0.152	0.037	0.10
24	2.00	3.00	0.137	0.152	0.038	0.10
25	2.08	3.10	0.142	0.152	0.039	0.10
26	2.17	4.20	0.192	0.152	---	0.04
27	2.25	5.00	0.229	0.152	---	0.08
28	2.33	3.50	0.160	0.152	---	0.01
29	2.42	6.80	0.311	0.152	---	0.16
30	2.50	7.30	0.334	0.152	---	0.18
31	2.58	8.20	0.375	0.152	---	0.22
32	2.67	5.90	0.270	0.152	---	0.12
33	2.75	2.00	0.091	0.152	0.025	0.07
34	2.83	1.80	0.082	0.152	0.023	0.06
35	2.92	1.80	0.082	0.152	0.023	0.06
36	3.00	0.60	0.027	0.152	0.008	0.02
Sum =		100.0			Sum =	2.8

Flood volume = Effective rainfall 0.23(In)

```
        times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
       Total soil loss =      0.15(In)
       Total soil loss =     0.013(Ac.Ft)
       Total rainfall =      0.38(In)
       Flood volume =         843.5 Cubic Feet
       Total soil loss =         553.4 Cubic Feet
----------------------------------------------------------------------
          Storm Event 3   Effective Rainfall =   0.483(In)
----------------------------------------------------------------------
```

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.075	0.152	0.021	0.05
2	0.17	1.30	0.075	0.152	0.021	0.05
3	0.25	1.10	0.064	0.152	0.018	0.05
4	0.33	1.50	0.087	0.152	0.024	0.06
5	0.42	1.50	0.087	0.152	0.024	0.06
6	0.50	1.80	0.104	0.152	0.029	0.08
7	0.58	1.50	0.087	0.152	0.024	0.06
8	0.67	1.80	0.104	0.152	0.029	0.08
9	0.75	1.80	0.104	0.152	0.029	0.08
10	0.83	1.50	0.087	0.152	0.024	0.06
11	0.92	1.60	0.093	0.152	0.026	0.07
12	1.00	1.80	0.104	0.152	0.029	0.08
13	1.08	2.20	0.127	0.152	0.035	0.09
14	1.17	2.20	0.127	0.152	0.035	0.09
15	1.25	2.20	0.127	0.152	0.035	0.09
16	1.33	2.00	0.116	0.152	0.032	0.08
17	1.42	2.60	0.151	0.152	0.042	0.11
18	1.50	2.70	0.156	0.152	---	0.00
19	1.58	2.40	0.139	0.152	0.038	0.10
20	1.67	2.70	0.156	0.152	---	0.00
21	1.75	3.30	0.191	0.152	---	0.04
22	1.83	3.10	0.180	0.152	---	0.03
23	1.92	2.90	0.168	0.152	---	0.02
24	2.00	3.00	0.174	0.152	---	0.02
25	2.08	3.10	0.180	0.152	---	0.03
26	2.17	4.20	0.243	0.152	---	0.09
27	2.25	5.00	0.290	0.152	---	0.14
28	2.33	3.50	0.203	0.152	---	0.05
29	2.42	6.80	0.394	0.152	---	0.24
30	2.50	7.30	0.423	0.152	---	0.27
31	2.58	8.20	0.475	0.152	---	0.32
32	2.67	5.90	0.342	0.152	---	0.19
33	2.75	2.00	0.116	0.152	0.032	0.08
34	2.83	1.80	0.104	0.152	0.029	0.08
35	2.92	1.80	0.104	0.152	0.029	0.08
36	3.00	0.60	0.035	0.152	0.010	0.03
	Sum =	100.0			Sum =	3.0

```
       Flood volume = Effective rainfall      0.25(In)
        times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
       Total soil loss =      0.23(In)
       Total soil loss =     0.019(Ac.Ft)
       Total rainfall =      0.48(In)
       Flood volume =         931.2 Cubic Feet
       Total soil loss =         838.1 Cubic Feet
----------------------------------------------------------------------
          Storm Event 2   Effective Rainfall =   0.914(In)
----------------------------------------------------------------------
```

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.143	0.152	0.039	0.10
2	0.17	1.30	0.143	0.152	0.039	0.10
3	0.25	1.10	0.121	0.152	0.033	0.09
4	0.33	1.50	0.165	0.152	---	0.01
5	0.42	1.50	0.165	0.152	---	0.01
6	0.50	1.80	0.198	0.152	---	0.05
7	0.58	1.50	0.165	0.152	---	0.01
8	0.67	1.80	0.198	0.152	---	0.05
9	0.75	1.80	0.198	0.152	---	0.05

10	0.83	1.50	0.165	0.152	---	0.01
11	0.92	1.60	0.176	0.152	---	0.02
12	1.00	1.80	0.198	0.152	---	0.05
13	1.08	2.20	0.241	0.152	---	0.09
14	1.17	2.20	0.241	0.152	---	0.09
15	1.25	2.20	0.241	0.152	---	0.09
16	1.33	2.00	0.219	0.152	---	0.07
17	1.42	2.60	0.285	0.152	---	0.13
18	1.50	2.70	0.296	0.152	---	0.14
19	1.58	2.40	0.263	0.152	---	0.11
20	1.67	2.70	0.296	0.152	---	0.14
21	1.75	3.30	0.362	0.152	---	0.21
22	1.83	3.10	0.340	0.152	---	0.19
23	1.92	2.90	0.318	0.152	---	0.17
24	2.00	3.00	0.329	0.152	---	0.18
25	2.08	3.10	0.340	0.152	---	0.19
26	2.17	4.20	0.461	0.152	---	0.31
27	2.25	5.00	0.549	0.152	---	0.40
28	2.33	3.50	0.384	0.152	---	0.23
29	2.42	6.80	0.746	0.152	---	0.59
30	2.50	7.30	0.801	0.152	---	0.65
31	2.58	8.20	0.900	0.152	---	0.75
32	2.67	5.90	0.647	0.152	---	0.50
33	2.75	2.00	0.219	0.152	---	0.07
34	2.83	1.80	0.198	0.152	---	0.05
35	2.92	1.80	0.198	0.152	---	0.05
36	3.00	0.60	0.066	0.152	0.018	0.05
Sum =		100.0			Sum =	6.0

Flood volume = Effective rainfall 0.50(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.42(In)
Total soil loss = 0.035(Ac.Ft)
Total rainfall = 0.91(In)
Flood volume = 1824.5 Cubic Feet
Total soil loss = 1528.0 Cubic Feet

Storm Event 1 Effective Rainfall = 2.540(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.396	0.152	---	0.24
2	0.17	1.30	0.396	0.152	---	0.24
3	0.25	1.10	0.335	0.152	---	0.18
4	0.33	1.50	0.457	0.152	---	0.30
5	0.42	1.50	0.457	0.152	---	0.30
6	0.50	1.80	0.549	0.152	---	0.40
7	0.58	1.50	0.457	0.152	---	0.30
8	0.67	1.80	0.549	0.152	---	0.40
9	0.75	1.80	0.549	0.152	---	0.40
10	0.83	1.50	0.457	0.152	---	0.30
11	0.92	1.60	0.488	0.152	---	0.34
12	1.00	1.80	0.549	0.152	---	0.40
13	1.08	2.20	0.671	0.152	---	0.52
14	1.17	2.20	0.671	0.152	---	0.52
15	1.25	2.20	0.671	0.152	---	0.52
16	1.33	2.00	0.610	0.152	---	0.46
17	1.42	2.60	0.792	0.152	---	0.64
18	1.50	2.70	0.823	0.152	---	0.67
19	1.58	2.40	0.732	0.152	---	0.58
20	1.67	2.70	0.823	0.152	---	0.67
21	1.75	3.30	1.006	0.152	---	0.85
22	1.83	3.10	0.945	0.152	---	0.79
23	1.92	2.90	0.884	0.152	---	0.73
24	2.00	3.00	0.914	0.152	---	0.76
25	2.08	3.10	0.945	0.152	---	0.79
26	2.17	4.20	1.280	0.152	---	1.13
27	2.25	5.00	1.524	0.152	---	1.37
28	2.33	3.50	1.067	0.152	---	0.91
29	2.42	6.80	2.073	0.152	---	1.92
30	2.50	7.30	2.225	0.152	---	2.07

```
31   2.58     8.20      2.499         0.152      ---          2.35
32   2.67     5.90      1.798         0.152      ---          1.65
33   2.75     2.00      0.610         0.152      ---          0.46
34   2.83     1.80      0.549         0.152      ---          0.40
35   2.92     1.80      0.549         0.152      ---          0.40
36   3.00     0.60      0.183         0.152      ---          0.03
   Sum =     100.0                                    Sum =    25.0
      Flood volume = Effective rainfall      2.08(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      0.46(In)
      Total soil loss =     0.038(Ac.Ft)
      Total rainfall =      2.54(In)
      Flood volume =        7638.1 Cubic Feet
      Total soil loss =        1674.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      2.272(CFS)
      ---------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       3 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0005      0.04  Q         |         |         |         |
  0+15       0.0007      0.04  Q         |         |         |         |
  0+20       0.0011      0.05  Q         |         |         |         |
  0+25       0.0014      0.05  Q         |         |         |         |
  0+30       0.0018      0.06  Q         |         |         |         |
  0+35       0.0022      0.05  Q         |         |         |         |
  0+40       0.0026      0.06  Q         |         |         |         |
  0+45       0.0030      0.06  Q         |         |         |         |
  0+50       0.0033      0.05  Q         |         |         |         |
  0+55       0.0037      0.05  Q         |         |         |         |
  1+ 0       0.0041      0.06  Q         |         |         |         |
  1+ 5       0.0046      0.07  Q         |         |         |         |
  1+10       0.0051      0.07  Q         |         |         |         |
  1+15       0.0056      0.07  Q         |         |         |         |
  1+20       0.0061      0.07  Q         |         |         |         |
  1+25       0.0066      0.08  QV        |         |         |         |
  1+30       0.0072      0.09  QV        |         |         |         |
  1+35       0.0078      0.08  QV        |         |         |         |
  1+40       0.0084      0.09  QV        |         |         |         |
  1+45       0.0091      0.10  QV        |         |         |         |
  1+50       0.0099      0.11  QV        |         |         |         |
  1+55       0.0106      0.10  QV        |         |         |         |
  2+ 0       0.0113      0.10  QV        |         |         |         |
  2+ 5       0.0120      0.10  QV        |         |         |         |
  2+10       0.0124      0.07  QV        |         |         |         |
  2+15       0.0129      0.07  QV        |         |         |         |
  2+20       0.0131      0.03  Q V       |         |         |         |
  2+25       0.0138      0.10  Q V       |         |         |         |
  2+30       0.0150      0.17  Q V       |         |         |         |
  2+35       0.0164      0.21  Q V       |         |         |         |
  2+40       0.0175      0.16  Q V       |         |         |         |
  2+45       0.0182      0.09  Q V       |         |         |         |
  2+50       0.0186      0.07  Q V       |         |         |         |
  2+55       0.0190      0.06  Q V       |         |         |         |
  3+ 0       0.0193      0.04  Q V       |         |         |         |
  3+ 5       0.0195      0.03  Q  V      |         |         |         |
  3+10       0.0199      0.05  Q  V      |         |         |         |
  3+15       0.0202      0.05  Q  V      |         |         |         |
  3+20       0.0206      0.06  Q  V      |         |         |         |
  3+25       0.0211      0.06  Q  V      |         |         |         |
  3+30       0.0216      0.07  Q  V      |         |         |         |
  3+35       0.0220      0.07  Q  V      |         |         |         |
  3+40       0.0225      0.07  Q  V      |         |         |         |
  3+45       0.0231      0.08  Q  V      |         |         |         |
```

```
3+50       0.0235      0.07  Q  V      |          |          |          |
3+55       0.0240      0.07  Q  V      |          |          |          |
4+ 0       0.0245      0.07  Q  V      |          |          |          |
4+ 5       0.0251      0.09  Q  V      |          |          |          |
4+10       0.0257      0.09  Q  V      |          |          |          |
4+15       0.0264      0.09  Q   V     |          |          |          |
4+20       0.0270      0.09  Q   V     |          |          |          |
4+25       0.0277      0.10  Q   V     |          |          |          |
4+30       0.0280      0.05  Q   V     |          |          |          |
4+35       0.0285      0.07  Q   V     |          |          |          |
4+40       0.0287      0.04  Q   V     |          |          |          |
4+45       0.0289      0.03  Q   V     |          |          |          |
4+50       0.0292      0.03  Q   V     |          |          |          |
4+55       0.0293      0.02  Q   V     |          |          |          |
5+ 0       0.0294      0.02  Q   V     |          |          |          |
5+ 5       0.0296      0.03  Q   V     |          |          |          |
5+10       0.0301      0.07  Q   V     |          |          |          |
5+15       0.0309      0.12  Q   V     |          |          |          |
5+20       0.0315      0.08  Q   V     |          |          |          |
5+25       0.0327      0.17  Q    V    |          |          |          |
5+30       0.0344      0.25  |Q   V    |          |          |          |
5+35       0.0365      0.31  |Q   V    |          |          |          |
5+40       0.0382      0.24  Q    V    |          |          |          |
5+45       0.0391      0.13  Q     V   |          |          |          |
5+50       0.0397      0.09  Q     V   |          |          |          |
5+55       0.0403      0.08  Q     V   |          |          |          |
6+ 0       0.0406      0.05  Q     V   |          |          |          |
6+ 5       0.0410      0.06  Q     V   |          |          |          |
6+10       0.0417      0.10  Q     V   |          |          |          |
6+15       0.0424      0.10  Q     V   |          |          |          |
6+20       0.0427      0.04  Q     V   |          |          |          |
6+25       0.0428      0.02  Q     V   |          |          |          |
6+30       0.0430      0.03  Q     V   |          |          |          |
6+35       0.0432      0.02  Q     V   |          |          |          |
6+40       0.0434      0.03  Q     V   |          |          |          |
6+45       0.0437      0.04  Q     V   |          |          |          |
6+50       0.0439      0.03  Q     V   |          |          |          |
6+55       0.0440      0.02  Q     V   |          |          |          |
7+ 0       0.0443      0.04  Q     V   |          |          |          |
7+ 5       0.0448      0.07  Q     V   |          |          |          |
7+10       0.0454      0.09  Q      V  |          |          |          |
7+15       0.0460      0.09  Q      V  |          |          |          |
7+20       0.0465      0.08  Q      V  |          |          |          |
7+25       0.0473      0.11  Q      V  |          |          |          |
7+30       0.0483      0.14  Q      V  |          |          |          |
7+35       0.0491      0.13  Q      V  |          |          |          |
7+40       0.0501      0.13  Q      V  |          |          |          |
7+45       0.0513      0.19  Q      V  |          |          |          |
7+50       0.0527      0.20  Q       V |          |          |          |
7+55       0.0539      0.18  Q       V |          |          |          |
8+ 0       0.0551      0.18  Q       V |          |          |          |
8+ 5       0.0564      0.19  Q       V |          |          |          |
8+10       0.0582      0.26  |Q       V|          |          |          |
8+15       0.0607      0.36  |Q       V|          |          |          |
8+20       0.0628      0.30  |Q       V|          |          |          |
```

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: BEAUMONTDEV6100.out


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----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
100 YEAR, 6 HOUR STORM
DEVELOPED CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     525.00(Ft.)
Length along longest watercourse measured to centroid =     345.00(Ft.)
Length along longest watercourse =      0.099 Mi.
Length along longest watercourse measured to centroid =      0.065 Mi.
Difference in elevation =       5.44(Ft.)
Slope along watercourse =     54.7109 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.025 Hr.
Lag time =     1.49 Min.
25% of lag time =     0.37 Min.
40% of lag time =     0.60 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           1.40                  1.41

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           3.38                  3.41

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.400(In)
Area Averaged 100-Year Rainfall =    3.380(In)

Point rain (area averaged) =    3.380(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    3.380(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           56.00         0.780
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	56.0	0.511	0.780	0.152	1.000	0.152
					Sum (F) =	0.152

Area averaged mean soil loss (F) (In/Hr) = 0.152
Minimum soil loss rate ((In/Hr)) = 0.076
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.276

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	335.676	60.069	0.611
2	0.167	671.352	35.248	0.359
3	0.250	1007.028	4.683	0.048
		Sum =	100.000	Sum= 1.018

Storm Event 4 Effective Rainfall = 0.507(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.030	0.152	0.008	0.02
2	0.17	0.60	0.037	0.152	0.010	0.03
3	0.25	0.60	0.037	0.152	0.010	0.03
4	0.33	0.60	0.037	0.152	0.010	0.03
5	0.42	0.60	0.037	0.152	0.010	0.03
6	0.50	0.70	0.043	0.152	0.012	0.03
7	0.58	0.70	0.043	0.152	0.012	0.03
8	0.67	0.70	0.043	0.152	0.012	0.03
9	0.75	0.70	0.043	0.152	0.012	0.03
10	0.83	0.70	0.043	0.152	0.012	0.03
11	0.92	0.70	0.043	0.152	0.012	0.03
12	1.00	0.80	0.049	0.152	0.013	0.04
13	1.08	0.80	0.049	0.152	0.013	0.04
14	1.17	0.80	0.049	0.152	0.013	0.04
15	1.25	0.80	0.049	0.152	0.013	0.04
16	1.33	0.80	0.049	0.152	0.013	0.04
17	1.42	0.80	0.049	0.152	0.013	0.04
18	1.50	0.80	0.049	0.152	0.013	0.04
19	1.58	0.80	0.049	0.152	0.013	0.04
20	1.67	0.80	0.049	0.152	0.013	0.04
21	1.75	0.80	0.049	0.152	0.013	0.04
22	1.83	0.80	0.049	0.152	0.013	0.04
23	1.92	0.80	0.049	0.152	0.013	0.04
24	2.00	0.90	0.055	0.152	0.015	0.04
25	2.08	0.80	0.049	0.152	0.013	0.04
26	2.17	0.90	0.055	0.152	0.015	0.04
27	2.25	0.90	0.055	0.152	0.015	0.04
28	2.33	0.90	0.055	0.152	0.015	0.04
29	2.42	0.90	0.055	0.152	0.015	0.04
30	2.50	0.90	0.055	0.152	0.015	0.04
31	2.58	0.90	0.055	0.152	0.015	0.04
32	2.67	0.90	0.055	0.152	0.015	0.04
33	2.75	1.00	0.061	0.152	0.017	0.04
34	2.83	1.00	0.061	0.152	0.017	0.04
35	2.92	1.00	0.061	0.152	0.017	0.04
36	3.00	1.00	0.061	0.152	0.017	0.04
37	3.08	1.00	0.061	0.152	0.017	0.04
38	3.17	1.10	0.067	0.152	0.018	0.05

39	3.25	1.10	0.067	0.152	0.018	0.05
40	3.33	1.10	0.067	0.152	0.018	0.05
41	3.42	1.20	0.073	0.152	0.020	0.05
42	3.50	1.30	0.079	0.152	0.022	0.06
43	3.58	1.40	0.085	0.152	0.024	0.06
44	3.67	1.40	0.085	0.152	0.024	0.06
45	3.75	1.50	0.091	0.152	0.025	0.07
46	3.83	1.50	0.091	0.152	0.025	0.07
47	3.92	1.60	0.097	0.152	0.027	0.07
48	4.00	1.60	0.097	0.152	0.027	0.07
49	4.08	1.70	0.103	0.152	0.029	0.07
50	4.17	1.80	0.110	0.152	0.030	0.08
51	4.25	1.90	0.116	0.152	0.032	0.08
52	4.33	2.00	0.122	0.152	0.034	0.09
53	4.42	2.10	0.128	0.152	0.035	0.09
54	4.50	2.10	0.128	0.152	0.035	0.09
55	4.58	2.20	0.134	0.152	0.037	0.10
56	4.67	2.30	0.140	0.152	0.039	0.10
57	4.75	2.40	0.146	0.152	0.040	0.11
58	4.83	2.40	0.146	0.152	0.040	0.11
59	4.92	2.50	0.152	0.152	0.042	0.11
60	5.00	2.60	0.158	0.152	---	0.01
61	5.08	3.10	0.189	0.152	---	0.04
62	5.17	3.60	0.219	0.152	---	0.07
63	5.25	3.90	0.237	0.152	---	0.09
64	5.33	4.20	0.256	0.152	---	0.10
65	5.42	4.70	0.286	0.152	---	0.13
66	5.50	5.60	0.341	0.152	---	0.19
67	5.58	1.90	0.116	0.152	0.032	0.08
68	5.67	0.90	0.055	0.152	0.015	0.04
69	5.75	0.60	0.037	0.152	0.010	0.03
70	5.83	0.50	0.030	0.152	0.008	0.02
71	5.92	0.30	0.018	0.152	0.005	0.01
72	6.00	0.20	0.012	0.152	0.003	0.01
	Sum =	100.0			Sum =	3.8

Flood volume = Effective rainfall 0.32(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.19(In)
Total soil loss = 0.016(Ac.Ft)
Total rainfall = 0.51(In)
Flood volume = 1162.3 Cubic Feet
Total soil loss = 696.5 Cubic Feet

Storm Event 3 Effective Rainfall = 0.642(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.039	0.152	0.011	0.03
2	0.17	0.60	0.046	0.152	0.013	0.03
3	0.25	0.60	0.046	0.152	0.013	0.03
4	0.33	0.60	0.046	0.152	0.013	0.03
5	0.42	0.60	0.046	0.152	0.013	0.03
6	0.50	0.70	0.054	0.152	0.015	0.04
7	0.58	0.70	0.054	0.152	0.015	0.04
8	0.67	0.70	0.054	0.152	0.015	0.04
9	0.75	0.70	0.054	0.152	0.015	0.04
10	0.83	0.70	0.054	0.152	0.015	0.04
11	0.92	0.70	0.054	0.152	0.015	0.04
12	1.00	0.80	0.062	0.152	0.017	0.04
13	1.08	0.80	0.062	0.152	0.017	0.04
14	1.17	0.80	0.062	0.152	0.017	0.04
15	1.25	0.80	0.062	0.152	0.017	0.04
16	1.33	0.80	0.062	0.152	0.017	0.04
17	1.42	0.80	0.062	0.152	0.017	0.04
18	1.50	0.80	0.062	0.152	0.017	0.04
19	1.58	0.80	0.062	0.152	0.017	0.04
20	1.67	0.80	0.062	0.152	0.017	0.04
21	1.75	0.80	0.062	0.152	0.017	0.04
22	1.83	0.80	0.062	0.152	0.017	0.04
23	1.92	0.80	0.062	0.152	0.017	0.04

24	2.00	0.90	0.069	0.152	0.019	0.05
25	2.08	0.80	0.062	0.152	0.017	0.04
26	2.17	0.90	0.069	0.152	0.019	0.05
27	2.25	0.90	0.069	0.152	0.019	0.05
28	2.33	0.90	0.069	0.152	0.019	0.05
29	2.42	0.90	0.069	0.152	0.019	0.05
30	2.50	0.90	0.069	0.152	0.019	0.05
31	2.58	0.90	0.069	0.152	0.019	0.05
32	2.67	0.90	0.069	0.152	0.019	0.05
33	2.75	1.00	0.077	0.152	0.021	0.06
34	2.83	1.00	0.077	0.152	0.021	0.06
35	2.92	1.00	0.077	0.152	0.021	0.06
36	3.00	1.00	0.077	0.152	0.021	0.06
37	3.08	1.00	0.077	0.152	0.021	0.06
38	3.17	1.10	0.085	0.152	0.023	0.06
39	3.25	1.10	0.085	0.152	0.023	0.06
40	3.33	1.10	0.085	0.152	0.023	0.06
41	3.42	1.20	0.092	0.152	0.026	0.07
42	3.50	1.30	0.100	0.152	0.028	0.07
43	3.58	1.40	0.108	0.152	0.030	0.08
44	3.67	1.40	0.108	0.152	0.030	0.08
45	3.75	1.50	0.116	0.152	0.032	0.08
46	3.83	1.50	0.116	0.152	0.032	0.08
47	3.92	1.60	0.123	0.152	0.034	0.09
48	4.00	1.60	0.123	0.152	0.034	0.09
49	4.08	1.70	0.131	0.152	0.036	0.09
50	4.17	1.80	0.139	0.152	0.038	0.10
51	4.25	1.90	0.146	0.152	0.040	0.11
52	4.33	2.00	0.154	0.152	---	0.00
53	4.42	2.10	0.162	0.152	---	0.01
54	4.50	2.10	0.162	0.152	---	0.01
55	4.58	2.20	0.170	0.152	---	0.02
56	4.67	2.30	0.177	0.152	---	0.03
57	4.75	2.40	0.185	0.152	---	0.03
58	4.83	2.40	0.185	0.152	---	0.03
59	4.92	2.50	0.193	0.152	---	0.04
60	5.00	2.60	0.200	0.152	---	0.05
61	5.08	3.10	0.239	0.152	---	0.09
62	5.17	3.60	0.277	0.152	---	0.13
63	5.25	3.90	0.301	0.152	---	0.15
64	5.33	4.20	0.324	0.152	---	0.17
65	5.42	4.70	0.362	0.152	---	0.21
66	5.50	5.60	0.432	0.152	---	0.28
67	5.58	1.90	0.146	0.152	0.040	0.11
68	5.67	0.90	0.069	0.152	0.019	0.05
69	5.75	0.60	0.046	0.152	0.013	0.03
70	5.83	0.50	0.039	0.152	0.011	0.03
71	5.92	0.30	0.023	0.152	0.006	0.02
72	6.00	0.20	0.015	0.152	0.004	0.01
Sum =		100.0			Sum =	4.3

```
      Flood volume = Effective rainfall      0.36(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
      Total soil loss =      0.29(In)
      Total soil loss =     0.024(Ac.Ft)
      Total rainfall =      0.64(In)
      Flood volume =        1304.0 Cubic Feet
      Total soil loss =        1050.5 Cubic Feet
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          Storm Event 2   Effective Rainfall =   1.217(In)
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Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1 0.08	0.50	0.073	0.152	0.020	0.05
2 0.17	0.60	0.088	0.152	0.024	0.06
3 0.25	0.60	0.088	0.152	0.024	0.06
4 0.33	0.60	0.088	0.152	0.024	0.06
5 0.42	0.60	0.088	0.152	0.024	0.06
6 0.50	0.70	0.102	0.152	0.028	0.07
7 0.58	0.70	0.102	0.152	0.028	0.07
8 0.67	0.70	0.102	0.152	0.028	0.07

9	0.75	0.70	0.102	0.152	0.028	0.07
10	0.83	0.70	0.102	0.152	0.028	0.07
11	0.92	0.70	0.102	0.152	0.028	0.07
12	1.00	0.80	0.117	0.152	0.032	0.08
13	1.08	0.80	0.117	0.152	0.032	0.08
14	1.17	0.80	0.117	0.152	0.032	0.08
15	1.25	0.80	0.117	0.152	0.032	0.08
16	1.33	0.80	0.117	0.152	0.032	0.08
17	1.42	0.80	0.117	0.152	0.032	0.08
18	1.50	0.80	0.117	0.152	0.032	0.08
19	1.58	0.80	0.117	0.152	0.032	0.08
20	1.67	0.80	0.117	0.152	0.032	0.08
21	1.75	0.80	0.117	0.152	0.032	0.08
22	1.83	0.80	0.117	0.152	0.032	0.08
23	1.92	0.80	0.117	0.152	0.032	0.08
24	2.00	0.90	0.131	0.152	0.036	0.10
25	2.08	0.80	0.117	0.152	0.032	0.08
26	2.17	0.90	0.131	0.152	0.036	0.10
27	2.25	0.90	0.131	0.152	0.036	0.10
28	2.33	0.90	0.131	0.152	0.036	0.10
29	2.42	0.90	0.131	0.152	0.036	0.10
30	2.50	0.90	0.131	0.152	0.036	0.10
31	2.58	0.90	0.131	0.152	0.036	0.10
32	2.67	0.90	0.131	0.152	0.036	0.10
33	2.75	1.00	0.146	0.152	0.040	0.11
34	2.83	1.00	0.146	0.152	0.040	0.11
35	2.92	1.00	0.146	0.152	0.040	0.11
36	3.00	1.00	0.146	0.152	0.040	0.11
37	3.08	1.00	0.146	0.152	0.040	0.11
38	3.17	1.10	0.161	0.152	---	0.01
39	3.25	1.10	0.161	0.152	---	0.01
40	3.33	1.10	0.161	0.152	---	0.01
41	3.42	1.20	0.175	0.152	---	0.02
42	3.50	1.30	0.190	0.152	---	0.04
43	3.58	1.40	0.204	0.152	---	0.05
44	3.67	1.40	0.204	0.152	---	0.05
45	3.75	1.50	0.219	0.152	---	0.07
46	3.83	1.50	0.219	0.152	---	0.07
47	3.92	1.60	0.234	0.152	---	0.08
48	4.00	1.60	0.234	0.152	---	0.08
49	4.08	1.70	0.248	0.152	---	0.10
50	4.17	1.80	0.263	0.152	---	0.11
51	4.25	1.90	0.277	0.152	---	0.13
52	4.33	2.00	0.292	0.152	---	0.14
53	4.42	2.10	0.307	0.152	---	0.15
54	4.50	2.10	0.307	0.152	---	0.15
55	4.58	2.20	0.321	0.152	---	0.17
56	4.67	2.30	0.336	0.152	---	0.18
57	4.75	2.40	0.350	0.152	---	0.20
58	4.83	2.40	0.350	0.152	---	0.20
59	4.92	2.50	0.365	0.152	---	0.21
60	5.00	2.60	0.380	0.152	---	0.23
61	5.08	3.10	0.453	0.152	---	0.30
62	5.17	3.60	0.526	0.152	---	0.37
63	5.25	3.90	0.569	0.152	---	0.42
64	5.33	4.20	0.613	0.152	---	0.46
65	5.42	4.70	0.686	0.152	---	0.53
66	5.50	5.60	0.818	0.152	---	0.67
67	5.58	1.90	0.277	0.152	---	0.13
68	5.67	0.90	0.131	0.152	0.036	0.10
69	5.75	0.60	0.088	0.152	0.024	0.06
70	5.83	0.50	0.073	0.152	0.020	0.05
71	5.92	0.30	0.044	0.152	0.012	0.03
72	6.00	0.20	0.029	0.152	0.008	0.02
	Sum =	100.0			Sum =	8.7

```
Flood volume = Effective rainfall      0.73(In)
 times area       1.0(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
Total soil loss =      0.49(In)
Total soil loss =     0.041(Ac.Ft)
Total rainfall =      1.22(In)
Flood volume =        2669.5 Cubic Feet
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Total soil loss = 1791.7 Cubic Feet

Storm Event 1 Effective Rainfall = 3.380(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.203	0.152	---	0.05
2	0.17	0.60	0.243	0.152	---	0.09
3	0.25	0.60	0.243	0.152	---	0.09
4	0.33	0.60	0.243	0.152	---	0.09
5	0.42	0.60	0.243	0.152	---	0.09
6	0.50	0.70	0.284	0.152	---	0.13
7	0.58	0.70	0.284	0.152	---	0.13
8	0.67	0.70	0.284	0.152	---	0.13
9	0.75	0.70	0.284	0.152	---	0.13
10	0.83	0.70	0.284	0.152	---	0.13
11	0.92	0.70	0.284	0.152	---	0.13
12	1.00	0.80	0.324	0.152	---	0.17
13	1.08	0.80	0.324	0.152	---	0.17
14	1.17	0.80	0.324	0.152	---	0.17
15	1.25	0.80	0.324	0.152	---	0.17
16	1.33	0.80	0.324	0.152	---	0.17
17	1.42	0.80	0.324	0.152	---	0.17
18	1.50	0.80	0.324	0.152	---	0.17
19	1.58	0.80	0.324	0.152	---	0.17
20	1.67	0.80	0.324	0.152	---	0.17
21	1.75	0.80	0.324	0.152	---	0.17
22	1.83	0.80	0.324	0.152	---	0.17
23	1.92	0.80	0.324	0.152	---	0.17
24	2.00	0.90	0.365	0.152	---	0.21
25	2.08	0.80	0.324	0.152	---	0.17
26	2.17	0.90	0.365	0.152	---	0.21
27	2.25	0.90	0.365	0.152	---	0.21
28	2.33	0.90	0.365	0.152	---	0.21
29	2.42	0.90	0.365	0.152	---	0.21
30	2.50	0.90	0.365	0.152	---	0.21
31	2.58	0.90	0.365	0.152	---	0.21
32	2.67	0.90	0.365	0.152	---	0.21
33	2.75	1.00	0.406	0.152	---	0.25
34	2.83	1.00	0.406	0.152	---	0.25
35	2.92	1.00	0.406	0.152	---	0.25
36	3.00	1.00	0.406	0.152	---	0.25
37	3.08	1.00	0.406	0.152	---	0.25
38	3.17	1.10	0.446	0.152	---	0.29
39	3.25	1.10	0.446	0.152	---	0.29
40	3.33	1.10	0.446	0.152	---	0.29
41	3.42	1.20	0.487	0.152	---	0.33
42	3.50	1.30	0.527	0.152	---	0.38
43	3.58	1.40	0.568	0.152	---	0.42
44	3.67	1.40	0.568	0.152	---	0.42
45	3.75	1.50	0.608	0.152	---	0.46
46	3.83	1.50	0.608	0.152	---	0.46
47	3.92	1.60	0.649	0.152	---	0.50
48	4.00	1.60	0.649	0.152	---	0.50
49	4.08	1.70	0.690	0.152	---	0.54
50	4.17	1.80	0.730	0.152	---	0.58
51	4.25	1.90	0.771	0.152	---	0.62
52	4.33	2.00	0.811	0.152	---	0.66
53	4.42	2.10	0.852	0.152	---	0.70
54	4.50	2.10	0.852	0.152	---	0.70
55	4.58	2.20	0.892	0.152	---	0.74
56	4.67	2.30	0.933	0.152	---	0.78
57	4.75	2.40	0.973	0.152	---	0.82
58	4.83	2.40	0.973	0.152	---	0.82
59	4.92	2.50	1.014	0.152	---	0.86
60	5.00	2.60	1.055	0.152	---	0.90
61	5.08	3.10	1.257	0.152	---	1.11
62	5.17	3.60	1.460	0.152	---	1.31
63	5.25	3.90	1.582	0.152	---	1.43
64	5.33	4.20	1.704	0.152	---	1.55

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65   5.42     4.70      1.906         0.152      ---          1.75
66   5.50     5.60      2.271         0.152      ---          2.12
67   5.58     1.90      0.771         0.152      ---          0.62
68   5.67     0.90      0.365         0.152      ---          0.21
69   5.75     0.60      0.243         0.152      ---          0.09
70   5.83     0.50      0.203         0.152      ---          0.05
71   5.92     0.30      0.122         0.152     0.034         0.09
72   6.00     0.20      0.081         0.152     0.022         0.06
   Sum =     100.0                                     Sum =    29.8
      Flood volume = Effective rainfall      2.49(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      0.89(In)
      Total soil loss =     0.075(Ac.Ft)
      Total rainfall =      3.38(In)
      Flood volume =        9119.5 Cubic Feet
      Total soil loss =        3272.6 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      2.000(CFS)
      ---------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       6 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q         |         |         |         |
  0+10       0.0003      0.02  Q         |         |         |         |
  0+15       0.0004      0.03  Q         |         |         |         |
  0+20       0.0006      0.03  Q         |         |         |         |
  0+25       0.0008      0.03  Q         |         |         |         |
  0+30       0.0010      0.03  Q         |         |         |         |
  0+35       0.0012      0.03  Q         |         |         |         |
  0+40       0.0014      0.03  Q         |         |         |         |
  0+45       0.0017      0.03  Q         |         |         |         |
  0+50       0.0019      0.03  Q         |         |         |         |
  0+55       0.0021      0.03  Q         |         |         |         |
  1+ 0       0.0023      0.03  Q         |         |         |         |
  1+ 5       0.0026      0.04  Q         |         |         |         |
  1+10       0.0028      0.04  Q         |         |         |         |
  1+15       0.0031      0.04  Q         |         |         |         |
  1+20       0.0033      0.04  Q         |         |         |         |
  1+25       0.0036      0.04  Q         |         |         |         |
  1+30       0.0038      0.04  Q         |         |         |         |
  1+35       0.0041      0.04  Q         |         |         |         |
  1+40       0.0043      0.04  Q         |         |         |         |
  1+45       0.0046      0.04  Q         |         |         |         |
  1+50       0.0048      0.04  Q         |         |         |         |
  1+55       0.0050      0.04  Q         |         |         |         |
  2+ 0       0.0053      0.04  Q         |         |         |         |
  2+ 5       0.0056      0.04  Q         |         |         |         |
  2+10       0.0058      0.04  Q         |         |         |         |
  2+15       0.0061      0.04  Q         |         |         |         |
  2+20       0.0064      0.04  Q         |         |         |         |
  2+25       0.0067      0.04  Q         |         |         |         |
  2+30       0.0070      0.04  Q         |         |         |         |
  2+35       0.0072      0.04  Q         |         |         |         |
  2+40       0.0075      0.04  Q         |         |         |         |
  2+45       0.0078      0.04  Q         |         |         |         |
  2+50       0.0081      0.04  Q         |         |         |         |
  2+55       0.0084      0.04  QV        |         |         |         |
  3+ 0       0.0087      0.04  QV        |         |         |         |
  3+ 5       0.0090      0.04  QV        |         |         |         |
  3+10       0.0094      0.05  QV        |         |         |         |
  3+15       0.0097      0.05  QV        |         |         |         |
  3+20       0.0100      0.05  QV        |         |         |         |
  3+25       0.0104      0.05  QV        |         |         |         |
  3+30       0.0108      0.06  QV        |         |         |         |
  3+35       0.0112      0.06  QV        |         |         |         |
```

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3+40       0.0116      0.06  QV        |          |          |          |
3+45       0.0121      0.07  QV        |          |          |          |
3+50       0.0126      0.07  QV        |          |          |          |
3+55       0.0130      0.07  QV        |          |          |          |
4+ 0       0.0135      0.07  QV        |          |          |          |
4+ 5       0.0140      0.07  QV        |          |          |          |
4+10       0.0146      0.08  QV        |          |          |          |
4+15       0.0152      0.08  QV        |          |          |          |
4+20       0.0158      0.09  QV        |          |          |          |
4+25       0.0164      0.09  Q V       |          |          |          |
4+30       0.0170      0.09  Q V       |          |          |          |
4+35       0.0177      0.10  Q V       |          |          |          |
4+40       0.0184      0.10  Q V       |          |          |          |
4+45       0.0191      0.11  Q V       |          |          |          |
4+50       0.0199      0.11  Q V       |          |          |          |
4+55       0.0206      0.11  Q V       |          |          |          |
5+ 0       0.0210      0.05  Q V       |          |          |          |
5+ 5       0.0212      0.03  Q V       |          |          |          |
5+10       0.0215      0.05  Q V       |          |          |          |
5+15       0.0221      0.08  Q V       |          |          |          |
5+20       0.0227      0.10  Q V       |          |          |          |
5+25       0.0236      0.12  Q V       |          |          |          |
5+30       0.0248      0.17  Q  V      |          |          |          |
5+35       0.0256      0.13  Q  V      |          |          |          |
5+40       0.0261      0.06  Q  V      |          |          |          |
5+45       0.0263      0.03  Q  V      |          |          |          |
5+50       0.0265      0.02  Q  V      |          |          |          |
5+55       0.0266      0.02  Q  V      |          |          |          |
6+ 0       0.0267      0.01  Q  V      |          |          |          |
6+ 5       0.0268      0.02  Q  V      |          |          |          |
6+10       0.0270      0.03  Q  V      |          |          |          |
6+15       0.0272      0.03  Q  V      |          |          |          |
6+20       0.0274      0.03  Q  V      |          |          |          |
6+25       0.0277      0.03  Q  V      |          |          |          |
6+30       0.0279      0.04  Q  V      |          |          |          |
6+35       0.0282      0.04  Q  V      |          |          |          |
6+40       0.0285      0.04  Q  V      |          |          |          |
6+45       0.0288      0.04  Q  V      |          |          |          |
6+50       0.0290      0.04  Q  V      |          |          |          |
6+55       0.0293      0.04  Q  V      |          |          |          |
7+ 0       0.0296      0.04  Q  V      |          |          |          |
7+ 5       0.0299      0.05  Q  V      |          |          |          |
7+10       0.0302      0.05  Q  V      |          |          |          |
7+15       0.0305      0.05  Q  V      |          |          |          |
7+20       0.0309      0.05  Q  V      |          |          |          |
7+25       0.0312      0.05  Q  V      |          |          |          |
7+30       0.0315      0.05  Q  V      |          |          |          |
7+35       0.0318      0.05  Q  V      |          |          |          |
7+40       0.0321      0.05  Q  V      |          |          |          |
7+45       0.0324      0.05  Q  V      |          |          |          |
7+50       0.0327      0.05  Q   V     |          |          |          |
7+55       0.0331      0.05  Q   V     |          |          |          |
8+ 0       0.0334      0.05  Q   V     |          |          |          |
8+ 5       0.0337      0.05  Q   V     |          |          |          |
8+10       0.0341      0.05  Q   V     |          |          |          |
8+15       0.0344      0.05  Q   V     |          |          |          |
8+20       0.0348      0.05  Q   V     |          |          |          |
8+25       0.0351      0.05  Q   V     |          |          |          |
8+30       0.0355      0.05  Q   V     |          |          |          |
8+35       0.0358      0.05  Q   V     |          |          |          |
8+40       0.0362      0.05  Q   V     |          |          |          |
8+45       0.0365      0.05  Q   V     |          |          |          |
8+50       0.0369      0.06  Q   V     |          |          |          |
8+55       0.0373      0.06  Q   V     |          |          |          |
9+ 0       0.0377      0.06  Q   V     |          |          |          |
9+ 5       0.0381      0.06  Q   V     |          |          |          |
9+10       0.0385      0.06  Q   V     |          |          |          |
9+15       0.0389      0.06  Q   V     |          |          |          |
9+20       0.0394      0.06  Q   V     |          |          |          |
9+25       0.0398      0.07  Q   V     |          |          |          |
9+30       0.0403      0.07  Q   V     |          |          |          |
```

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 9+35       0.0409      0.08  Q   V     |          |          |          |
 9+40       0.0414      0.08  Q    V    |          |          |          |
 9+45       0.0420      0.08  Q    V    |          |          |          |
 9+50       0.0426      0.08  Q    V    |          |          |          |
 9+55       0.0432      0.09  Q    V    |          |          |          |
10+ 0       0.0438      0.09  Q    V    |          |          |          |
10+ 5       0.0444      0.09  Q    V    |          |          |          |
10+10       0.0451      0.10  Q    V    |          |          |          |
10+15       0.0459      0.11  Q    V    |          |          |          |
10+20       0.0462      0.04  Q    V    |          |          |          |
10+25       0.0462      0.01  Q    V    |          |          |          |
10+30       0.0463      0.01  Q    V    |          |          |          |
10+35       0.0464      0.01  Q    V    |          |          |          |
10+40       0.0466      0.02  Q    V    |          |          |          |
10+45       0.0468      0.03  Q    V    |          |          |          |
10+50       0.0470      0.03  Q    V    |          |          |          |
10+55       0.0472      0.04  Q    V    |          |          |          |
11+ 0       0.0476      0.05  Q    V    |          |          |          |
11+ 5       0.0481      0.07  Q    V    |          |          |          |
11+10       0.0488      0.11  Q    V    |          |          |          |
11+15       0.0498      0.14  Q     V   |          |          |          |
11+20       0.0509      0.16  Q     V   |          |          |          |
11+25       0.0523      0.20  Q     V   |          |          |          |
11+30       0.0540      0.25  |Q    V   |          |          |          |
11+35       0.0552      0.18  Q     V   |          |          |          |
11+40       0.0558      0.08  Q     V   |          |          |          |
11+45       0.0561      0.04  Q     V   |          |          |          |
11+50       0.0563      0.03  Q     V   |          |          |          |
11+55       0.0565      0.02  Q     V   |          |          |          |
12+ 0       0.0566      0.01  Q     V   |          |          |          |
12+ 5       0.0568      0.03  Q     V   |          |          |          |
12+10       0.0572      0.06  Q     V   |          |          |          |
12+15       0.0576      0.06  Q      V  |          |          |          |
12+20       0.0581      0.06  Q      V  |          |          |          |
12+25       0.0585      0.06  Q      V  |          |          |          |
12+30       0.0590      0.07  Q      V  |          |          |          |
12+35       0.0595      0.07  Q      V  |          |          |          |
12+40       0.0600      0.08  Q      V  |          |          |          |
12+45       0.0605      0.08  Q      V  |          |          |          |
12+50       0.0611      0.08  Q      V  |          |          |          |
12+55       0.0616      0.08  Q      V  |          |          |          |
13+ 0       0.0622      0.08  Q      V  |          |          |          |
13+ 5       0.0627      0.09  Q      V  |          |          |          |
13+10       0.0633      0.09  Q      V  |          |          |          |
13+15       0.0639      0.09  Q      V  |          |          |          |
13+20       0.0645      0.09  Q      V  |          |          |          |
13+25       0.0651      0.09  Q      V  |          |          |          |
13+30       0.0657      0.09  Q       V |          |          |          |
13+35       0.0663      0.09  Q       V |          |          |          |
13+40       0.0669      0.09  Q       V |          |          |          |
13+45       0.0675      0.09  Q       V |          |          |          |
13+50       0.0681      0.09  Q       V |          |          |          |
13+55       0.0687      0.09  Q       V |          |          |          |
14+ 0       0.0693      0.09  Q       V |          |          |          |
14+ 5       0.0699      0.09  Q       V |          |          |          |
14+10       0.0706      0.09  Q       V |          |          |          |
14+15       0.0712      0.10  Q       V |          |          |          |
14+20       0.0719      0.10  Q       V |          |          |          |
14+25       0.0726      0.10  Q       V |          |          |          |
14+30       0.0732      0.10  Q       V |          |          |          |
14+35       0.0739      0.10  Q        V|          |          |          |
14+40       0.0746      0.10  Q        V|          |          |          |
14+45       0.0753      0.10  Q        V|          |          |          |
14+50       0.0760      0.11  Q        V|          |          |          |
14+55       0.0768      0.11  Q        V|          |          |          |
15+ 0       0.0775      0.11  Q        V|          |          |          |
15+ 5       0.0782      0.11  Q        V|          |          |          |
15+10       0.0786      0.05  Q        V|          |          |          |
15+15       0.0787      0.01  Q        V|          |          |          |
15+20       0.0787      0.01  Q        V|          |          |          |
15+25       0.0788      0.02  Q        V|          |          |          |
```

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15+30       0.0791      0.03  Q        V|         |         |         |
15+35       0.0794      0.05  Q        V|         |         |         |
15+40       0.0797      0.05  Q        V|         |         |         |
15+45       0.0802      0.06  Q        V|         |         |         |
15+50       0.0806      0.07  Q        V|         |         |         |
15+55       0.0812      0.08  Q        V|         |         |         |
16+ 0       0.0817      0.08  Q        V|         |         |         |
16+ 5       0.0824      0.09  Q         V         |         |         |
16+10       0.0831      0.11  Q         V         |         |         |
16+15       0.0839      0.12  Q         V         |         |         |
16+20       0.0849      0.14  Q         V         |         |         |
16+25       0.0859      0.15  Q         V         |         |         |
16+30       0.0870      0.16  Q         V         |         |         |
16+35       0.0881      0.17  Q         V         |         |         |
16+40       0.0894      0.18  Q         V         |         |         |
16+45       0.0907      0.20  Q         |V        |         |         |
16+50       0.0921      0.20  Q         |V        |         |         |
16+55       0.0935      0.21  Q         |V        |         |         |
17+ 0       0.0951      0.22  Q         |V        |         |         |
17+ 5       0.0970      0.28  |Q        |V        |         |         |
17+10       0.0994      0.35  |Q        | V       |         |         |
17+15       0.1022      0.40  |Q        | V       |         |         |
17+20       0.1053      0.45  |Q        | V       |         |         |
17+25       0.1088      0.51  | Q       |  V      |         |         |
17+30       0.1131      0.62  | Q       |  V      |         |         |
17+35       0.1154      0.34  |Q        |   V     |         |         |
17+40       0.1163      0.13  Q         |   V     |         |         |
17+45       0.1169      0.08  Q         |   V     |         |         |
17+50       0.1173      0.06  Q         |   V     |         |         |
17+55       0.1176      0.04  Q         |   V     |         |         |
18+ 0       0.1178      0.03  Q         |   V     |         |         |
18+ 5       0.1180      0.03  Q         |   V     |         |         |
18+10       0.1185      0.07  Q         |   V     |         |         |
18+15       0.1191      0.09  Q         |   V     |         |         |
18+20       0.1198      0.09  Q         |   V     |         |         |
18+25       0.1204      0.09  Q         |   V     |         |         |
18+30       0.1212      0.12  Q         |   V     |         |         |
18+35       0.1221      0.13  Q         |   V     |         |         |
18+40       0.1230      0.13  Q         |    V    |         |         |
18+45       0.1240      0.13  Q         |    V    |         |         |
18+50       0.1249      0.13  Q         |    V    |         |         |
18+55       0.1258      0.13  Q         |    V    |         |         |
19+ 0       0.1269      0.16  Q         |    V    |         |         |
19+ 5       0.1281      0.17  Q         |    V    |         |         |
19+10       0.1293      0.18  Q         |    V    |         |         |
19+15       0.1305      0.18  Q         |    V    |         |         |
19+20       0.1317      0.18  Q         |     V   |         |         |
19+25       0.1329      0.18  Q         |     V   |         |         |
19+30       0.1341      0.18  Q         |     V   |         |         |
19+35       0.1353      0.18  Q         |     V   |         |         |
19+40       0.1366      0.18  Q         |     V   |         |         |
19+45       0.1378      0.18  Q         |     V   |         |         |
19+50       0.1390      0.18  Q         |     V   |         |         |
19+55       0.1402      0.18  Q         |      V  |
```

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: BEAUMONTDEV24100.out


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----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
100 YEAR, 24 HOUR STORM
DEVELOPED CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     525.00(Ft.)
Length along longest watercourse measured to centroid =     345.00(Ft.)
Length along longest watercourse =      0.099 Mi.
Length along longest watercourse measured to centroid =      0.065 Mi.
Difference in elevation =       5.44(Ft.)
Slope along watercourse =     54.7109 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.025 Hr.
Lag time =     1.49 Min.
25% of lag time =     0.37 Min.
40% of lag time =     0.60 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.73                  2.76

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           6.52                  6.59

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    2.730(In)
Area Averaged 100-Year Rainfall =    6.520(In)

Point rain (area averaged) =    6.520(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    6.520(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           56.00         0.780
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	56.0	0.511	0.780	0.152	1.000	0.152
					Sum (F) =	0.152

Area averaged mean soil loss (F) (In/Hr) = 0.152
Minimum soil loss rate ((In/Hr)) = 0.076
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.276

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	335.676	60.069	0.611
2	0.167	671.352	35.248	0.359
3	0.250	1007.028	4.683	0.048
		Sum =	100.000	Sum= 1.018

Storm Event 4 Effective Rainfall = 0.978(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.008	0.270	0.002	0.01
2	0.17	0.07	0.008	0.269	0.002	0.01
3	0.25	0.07	0.008	0.268	0.002	0.01
4	0.33	0.10	0.012	0.267	0.003	0.01
5	0.42	0.10	0.012	0.266	0.003	0.01
6	0.50	0.10	0.012	0.265	0.003	0.01
7	0.58	0.10	0.012	0.264	0.003	0.01
8	0.67	0.10	0.012	0.263	0.003	0.01
9	0.75	0.10	0.012	0.262	0.003	0.01
10	0.83	0.13	0.016	0.261	0.004	0.01
11	0.92	0.13	0.016	0.259	0.004	0.01
12	1.00	0.13	0.016	0.258	0.004	0.01
13	1.08	0.10	0.012	0.257	0.003	0.01
14	1.17	0.10	0.012	0.256	0.003	0.01
15	1.25	0.10	0.012	0.255	0.003	0.01
16	1.33	0.10	0.012	0.254	0.003	0.01
17	1.42	0.10	0.012	0.253	0.003	0.01
18	1.50	0.10	0.012	0.252	0.003	0.01
19	1.58	0.10	0.012	0.251	0.003	0.01
20	1.67	0.10	0.012	0.250	0.003	0.01
21	1.75	0.10	0.012	0.249	0.003	0.01
22	1.83	0.13	0.016	0.248	0.004	0.01
23	1.92	0.13	0.016	0.247	0.004	0.01
24	2.00	0.13	0.016	0.246	0.004	0.01
25	2.08	0.13	0.016	0.245	0.004	0.01
26	2.17	0.13	0.016	0.244	0.004	0.01
27	2.25	0.13	0.016	0.243	0.004	0.01
28	2.33	0.13	0.016	0.242	0.004	0.01
29	2.42	0.13	0.016	0.241	0.004	0.01
30	2.50	0.13	0.016	0.240	0.004	0.01
31	2.58	0.17	0.020	0.239	0.005	0.01
32	2.67	0.17	0.020	0.238	0.005	0.01
33	2.75	0.17	0.020	0.237	0.005	0.01
34	2.83	0.17	0.020	0.236	0.005	0.01
35	2.92	0.17	0.020	0.236	0.005	0.01
36	3.00	0.17	0.020	0.235	0.005	0.01
37	3.08	0.17	0.020	0.234	0.005	0.01
38	3.17	0.17	0.020	0.233	0.005	0.01

39	3.25	0.17	0.020	0.232	0.005	0.01
40	3.33	0.17	0.020	0.231	0.005	0.01
41	3.42	0.17	0.020	0.230	0.005	0.01
42	3.50	0.17	0.020	0.229	0.005	0.01
43	3.58	0.17	0.020	0.228	0.005	0.01
44	3.67	0.17	0.020	0.227	0.005	0.01
45	3.75	0.17	0.020	0.226	0.005	0.01
46	3.83	0.20	0.023	0.225	0.006	0.02
47	3.92	0.20	0.023	0.224	0.006	0.02
48	4.00	0.20	0.023	0.223	0.006	0.02
49	4.08	0.20	0.023	0.222	0.006	0.02
50	4.17	0.20	0.023	0.221	0.006	0.02
51	4.25	0.20	0.023	0.220	0.006	0.02
52	4.33	0.23	0.027	0.219	0.008	0.02
53	4.42	0.23	0.027	0.218	0.008	0.02
54	4.50	0.23	0.027	0.217	0.008	0.02
55	4.58	0.23	0.027	0.216	0.008	0.02
56	4.67	0.23	0.027	0.216	0.008	0.02
57	4.75	0.23	0.027	0.215	0.008	0.02
58	4.83	0.27	0.031	0.214	0.009	0.02
59	4.92	0.27	0.031	0.213	0.009	0.02
60	5.00	0.27	0.031	0.212	0.009	0.02
61	5.08	0.20	0.023	0.211	0.006	0.02
62	5.17	0.20	0.023	0.210	0.006	0.02
63	5.25	0.20	0.023	0.209	0.006	0.02
64	5.33	0.23	0.027	0.208	0.008	0.02
65	5.42	0.23	0.027	0.207	0.008	0.02
66	5.50	0.23	0.027	0.206	0.008	0.02
67	5.58	0.27	0.031	0.205	0.009	0.02
68	5.67	0.27	0.031	0.205	0.009	0.02
69	5.75	0.27	0.031	0.204	0.009	0.02
70	5.83	0.27	0.031	0.203	0.009	0.02
71	5.92	0.27	0.031	0.202	0.009	0.02
72	6.00	0.27	0.031	0.201	0.009	0.02
73	6.08	0.30	0.035	0.200	0.010	0.03
74	6.17	0.30	0.035	0.199	0.010	0.03
75	6.25	0.30	0.035	0.198	0.010	0.03
76	6.33	0.30	0.035	0.197	0.010	0.03
77	6.42	0.30	0.035	0.196	0.010	0.03
78	6.50	0.30	0.035	0.196	0.010	0.03
79	6.58	0.33	0.039	0.195	0.011	0.03
80	6.67	0.33	0.039	0.194	0.011	0.03
81	6.75	0.33	0.039	0.193	0.011	0.03
82	6.83	0.33	0.039	0.192	0.011	0.03
83	6.92	0.33	0.039	0.191	0.011	0.03
84	7.00	0.33	0.039	0.190	0.011	0.03
85	7.08	0.33	0.039	0.190	0.011	0.03
86	7.17	0.33	0.039	0.189	0.011	0.03
87	7.25	0.33	0.039	0.188	0.011	0.03
88	7.33	0.37	0.043	0.187	0.012	0.03
89	7.42	0.37	0.043	0.186	0.012	0.03
90	7.50	0.37	0.043	0.185	0.012	0.03
91	7.58	0.40	0.047	0.184	0.013	0.03
92	7.67	0.40	0.047	0.184	0.013	0.03
93	7.75	0.40	0.047	0.183	0.013	0.03
94	7.83	0.43	0.051	0.182	0.014	0.04
95	7.92	0.43	0.051	0.181	0.014	0.04
96	8.00	0.43	0.051	0.180	0.014	0.04
97	8.08	0.50	0.059	0.179	0.016	0.04
98	8.17	0.50	0.059	0.178	0.016	0.04
99	8.25	0.50	0.059	0.178	0.016	0.04
100	8.33	0.50	0.059	0.177	0.016	0.04
101	8.42	0.50	0.059	0.176	0.016	0.04
102	8.50	0.50	0.059	0.175	0.016	0.04
103	8.58	0.53	0.063	0.174	0.017	0.05
104	8.67	0.53	0.063	0.174	0.017	0.05
105	8.75	0.53	0.063	0.173	0.017	0.05
106	8.83	0.57	0.067	0.172	0.018	0.05
107	8.92	0.57	0.067	0.171	0.018	0.05
108	9.00	0.57	0.067	0.170	0.018	0.05
109	9.08	0.63	0.074	0.169	0.021	0.05

110	9.17	0.63	0.074	0.169	0.021	0.05
111	9.25	0.63	0.074	0.168	0.021	0.05
112	9.33	0.67	0.078	0.167	0.022	0.06
113	9.42	0.67	0.078	0.166	0.022	0.06
114	9.50	0.67	0.078	0.165	0.022	0.06
115	9.58	0.70	0.082	0.165	0.023	0.06
116	9.67	0.70	0.082	0.164	0.023	0.06
117	9.75	0.70	0.082	0.163	0.023	0.06
118	9.83	0.73	0.086	0.162	0.024	0.06
119	9.92	0.73	0.086	0.162	0.024	0.06
120	10.00	0.73	0.086	0.161	0.024	0.06
121	10.08	0.50	0.059	0.160	0.016	0.04
122	10.17	0.50	0.059	0.159	0.016	0.04
123	10.25	0.50	0.059	0.158	0.016	0.04
124	10.33	0.50	0.059	0.158	0.016	0.04
125	10.42	0.50	0.059	0.157	0.016	0.04
126	10.50	0.50	0.059	0.156	0.016	0.04
127	10.58	0.67	0.078	0.155	0.022	0.06
128	10.67	0.67	0.078	0.155	0.022	0.06
129	10.75	0.67	0.078	0.154	0.022	0.06
130	10.83	0.67	0.078	0.153	0.022	0.06
131	10.92	0.67	0.078	0.152	0.022	0.06
132	11.00	0.67	0.078	0.152	0.022	0.06
133	11.08	0.63	0.074	0.151	0.021	0.05
134	11.17	0.63	0.074	0.150	0.021	0.05
135	11.25	0.63	0.074	0.149	0.021	0.05
136	11.33	0.63	0.074	0.149	0.021	0.05
137	11.42	0.63	0.074	0.148	0.021	0.05
138	11.50	0.63	0.074	0.147	0.021	0.05
139	11.58	0.57	0.067	0.146	0.018	0.05
140	11.67	0.57	0.067	0.146	0.018	0.05
141	11.75	0.57	0.067	0.145	0.018	0.05
142	11.83	0.60	0.070	0.144	0.019	0.05
143	11.92	0.60	0.070	0.144	0.019	0.05
144	12.00	0.60	0.070	0.143	0.019	0.05
145	12.08	0.83	0.098	0.142	0.027	0.07
146	12.17	0.83	0.098	0.141	0.027	0.07
147	12.25	0.83	0.098	0.141	0.027	0.07
148	12.33	0.87	0.102	0.140	0.028	0.07
149	12.42	0.87	0.102	0.139	0.028	0.07
150	12.50	0.87	0.102	0.139	0.028	0.07
151	12.58	0.93	0.110	0.138	0.030	0.08
152	12.67	0.93	0.110	0.137	0.030	0.08
153	12.75	0.93	0.110	0.136	0.030	0.08
154	12.83	0.97	0.113	0.136	0.031	0.08
155	12.92	0.97	0.113	0.135	0.031	0.08
156	13.00	0.97	0.113	0.134	0.031	0.08
157	13.08	1.13	0.133	0.134	0.037	0.10
158	13.17	1.13	0.133	0.133	0.037	0.10
159	13.25	1.13	0.133	0.132	---	0.00
160	13.33	1.13	0.133	0.132	---	0.00
161	13.42	1.13	0.133	0.131	---	0.00
162	13.50	1.13	0.133	0.130	---	0.00
163	13.58	0.77	0.090	0.130	0.025	0.07
164	13.67	0.77	0.090	0.129	0.025	0.07
165	13.75	0.77	0.090	0.128	0.025	0.07
166	13.83	0.77	0.090	0.128	0.025	0.07
167	13.92	0.77	0.090	0.127	0.025	0.07
168	14.00	0.77	0.090	0.126	0.025	0.07
169	14.08	0.90	0.106	0.126	0.029	0.08
170	14.17	0.90	0.106	0.125	0.029	0.08
171	14.25	0.90	0.106	0.125	0.029	0.08
172	14.33	0.87	0.102	0.124	0.028	0.07
173	14.42	0.87	0.102	0.123	0.028	0.07
174	14.50	0.87	0.102	0.123	0.028	0.07
175	14.58	0.87	0.102	0.122	0.028	0.07
176	14.67	0.87	0.102	0.121	0.028	0.07
177	14.75	0.87	0.102	0.121	0.028	0.07
178	14.83	0.83	0.098	0.120	0.027	0.07
179	14.92	0.83	0.098	0.120	0.027	0.07
180	15.00	0.83	0.098	0.119	0.027	0.07

181	15.08	0.80	0.094	0.118	0.026	0.07
182	15.17	0.80	0.094	0.118	0.026	0.07
183	15.25	0.80	0.094	0.117	0.026	0.07
184	15.33	0.77	0.090	0.116	0.025	0.07
185	15.42	0.77	0.090	0.116	0.025	0.07
186	15.50	0.77	0.090	0.115	0.025	0.07
187	15.58	0.63	0.074	0.115	0.021	0.05
188	15.67	0.63	0.074	0.114	0.021	0.05
189	15.75	0.63	0.074	0.114	0.021	0.05
190	15.83	0.63	0.074	0.113	0.021	0.05
191	15.92	0.63	0.074	0.112	0.021	0.05
192	16.00	0.63	0.074	0.112	0.021	0.05
193	16.08	0.13	0.016	0.111	0.004	0.01
194	16.17	0.13	0.016	0.111	0.004	0.01
195	16.25	0.13	0.016	0.110	0.004	0.01
196	16.33	0.13	0.016	0.110	0.004	0.01
197	16.42	0.13	0.016	0.109	0.004	0.01
198	16.50	0.13	0.016	0.108	0.004	0.01
199	16.58	0.10	0.012	0.108	0.003	0.01
200	16.67	0.10	0.012	0.107	0.003	0.01
201	16.75	0.10	0.012	0.107	0.003	0.01
202	16.83	0.10	0.012	0.106	0.003	0.01
203	16.92	0.10	0.012	0.106	0.003	0.01
204	17.00	0.10	0.012	0.105	0.003	0.01
205	17.08	0.17	0.020	0.105	0.005	0.01
206	17.17	0.17	0.020	0.104	0.005	0.01
207	17.25	0.17	0.020	0.104	0.005	0.01
208	17.33	0.17	0.020	0.103	0.005	0.01
209	17.42	0.17	0.020	0.103	0.005	0.01
210	17.50	0.17	0.020	0.102	0.005	0.01
211	17.58	0.17	0.020	0.102	0.005	0.01
212	17.67	0.17	0.020	0.101	0.005	0.01
213	17.75	0.17	0.020	0.100	0.005	0.01
214	17.83	0.13	0.016	0.100	0.004	0.01
215	17.92	0.13	0.016	0.100	0.004	0.01
216	18.00	0.13	0.016	0.099	0.004	0.01
217	18.08	0.13	0.016	0.099	0.004	0.01
218	18.17	0.13	0.016	0.098	0.004	0.01
219	18.25	0.13	0.016	0.098	0.004	0.01
220	18.33	0.13	0.016	0.097	0.004	0.01
221	18.42	0.13	0.016	0.097	0.004	0.01
222	18.50	0.13	0.016	0.096	0.004	0.01
223	18.58	0.10	0.012	0.096	0.003	0.01
224	18.67	0.10	0.012	0.095	0.003	0.01
225	18.75	0.10	0.012	0.095	0.003	0.01
226	18.83	0.07	0.008	0.094	0.002	0.01
227	18.92	0.07	0.008	0.094	0.002	0.01
228	19.00	0.07	0.008	0.093	0.002	0.01
229	19.08	0.10	0.012	0.093	0.003	0.01
230	19.17	0.10	0.012	0.093	0.003	0.01
231	19.25	0.10	0.012	0.092	0.003	0.01
232	19.33	0.13	0.016	0.092	0.004	0.01
233	19.42	0.13	0.016	0.091	0.004	0.01
234	19.50	0.13	0.016	0.091	0.004	0.01
235	19.58	0.10	0.012	0.090	0.003	0.01
236	19.67	0.10	0.012	0.090	0.003	0.01
237	19.75	0.10	0.012	0.090	0.003	0.01
238	19.83	0.07	0.008	0.089	0.002	0.01
239	19.92	0.07	0.008	0.089	0.002	0.01
240	20.00	0.07	0.008	0.088	0.002	0.01
241	20.08	0.10	0.012	0.088	0.003	0.01
242	20.17	0.10	0.012	0.088	0.003	0.01
243	20.25	0.10	0.012	0.087	0.003	0.01
244	20.33	0.10	0.012	0.087	0.003	0.01
245	20.42	0.10	0.012	0.086	0.003	0.01
246	20.50	0.10	0.012	0.086	0.003	0.01
247	20.58	0.10	0.012	0.086	0.003	0.01
248	20.67	0.10	0.012	0.085	0.003	0.01
249	20.75	0.10	0.012	0.085	0.003	0.01
250	20.83	0.07	0.008	0.085	0.002	0.01
251	20.92	0.07	0.008	0.084	0.002	0.01

252	21.00	0.07	0.008	0.084	0.002	0.01
253	21.08	0.10	0.012	0.084	0.003	0.01
254	21.17	0.10	0.012	0.083	0.003	0.01
255	21.25	0.10	0.012	0.083	0.003	0.01
256	21.33	0.07	0.008	0.083	0.002	0.01
257	21.42	0.07	0.008	0.082	0.002	0.01
258	21.50	0.07	0.008	0.082	0.002	0.01
259	21.58	0.10	0.012	0.082	0.003	0.01
260	21.67	0.10	0.012	0.081	0.003	0.01
261	21.75	0.10	0.012	0.081	0.003	0.01
262	21.83	0.07	0.008	0.081	0.002	0.01
263	21.92	0.07	0.008	0.081	0.002	0.01
264	22.00	0.07	0.008	0.080	0.002	0.01
265	22.08	0.10	0.012	0.080	0.003	0.01
266	22.17	0.10	0.012	0.080	0.003	0.01
267	22.25	0.10	0.012	0.080	0.003	0.01
268	22.33	0.07	0.008	0.079	0.002	0.01
269	22.42	0.07	0.008	0.079	0.002	0.01
270	22.50	0.07	0.008	0.079	0.002	0.01
271	22.58	0.07	0.008	0.079	0.002	0.01
272	22.67	0.07	0.008	0.078	0.002	0.01
273	22.75	0.07	0.008	0.078	0.002	0.01
274	22.83	0.07	0.008	0.078	0.002	0.01
275	22.92	0.07	0.008	0.078	0.002	0.01
276	23.00	0.07	0.008	0.078	0.002	0.01
277	23.08	0.07	0.008	0.077	0.002	0.01
278	23.17	0.07	0.008	0.077	0.002	0.01
279	23.25	0.07	0.008	0.077	0.002	0.01
280	23.33	0.07	0.008	0.077	0.002	0.01
281	23.42	0.07	0.008	0.077	0.002	0.01
282	23.50	0.07	0.008	0.077	0.002	0.01
283	23.58	0.07	0.008	0.077	0.002	0.01
284	23.67	0.07	0.008	0.076	0.002	0.01
285	23.75	0.07	0.008	0.076	0.002	0.01
286	23.83	0.07	0.008	0.076	0.002	0.01
287	23.92	0.07	0.008	0.076	0.002	0.01
288	24.00	0.07	0.008	0.076	0.002	0.01
	Sum =	100.0			Sum =	8.1

Flood volume = Effective rainfall 0.68(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.30(In)
Total soil loss = 0.025(Ac.Ft)
Total rainfall = 0.98(In)
Flood volume = 2480.3 Cubic Feet
Total soil loss = 1105.3 Cubic Feet

Storm Event 3 Effective Rainfall = 1.239(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.010	0.270	0.003	0.01
2	0.17	0.07	0.010	0.269	0.003	0.01
3	0.25	0.07	0.010	0.268	0.003	0.01
4	0.33	0.10	0.015	0.267	0.004	0.01
5	0.42	0.10	0.015	0.266	0.004	0.01
6	0.50	0.10	0.015	0.265	0.004	0.01
7	0.58	0.10	0.015	0.264	0.004	0.01
8	0.67	0.10	0.015	0.263	0.004	0.01
9	0.75	0.10	0.015	0.262	0.004	0.01
10	0.83	0.13	0.020	0.261	0.005	0.01
11	0.92	0.13	0.020	0.259	0.005	0.01
12	1.00	0.13	0.020	0.258	0.005	0.01
13	1.08	0.10	0.015	0.257	0.004	0.01
14	1.17	0.10	0.015	0.256	0.004	0.01
15	1.25	0.10	0.015	0.255	0.004	0.01
16	1.33	0.10	0.015	0.254	0.004	0.01
17	1.42	0.10	0.015	0.253	0.004	0.01
18	1.50	0.10	0.015	0.252	0.004	0.01
19	1.58	0.10	0.015	0.251	0.004	0.01
20	1.67	0.10	0.015	0.250	0.004	0.01

21	1.75	0.10	0.015	0.249	0.004	0.01
22	1.83	0.13	0.020	0.248	0.005	0.01
23	1.92	0.13	0.020	0.247	0.005	0.01
24	2.00	0.13	0.020	0.246	0.005	0.01
25	2.08	0.13	0.020	0.245	0.005	0.01
26	2.17	0.13	0.020	0.244	0.005	0.01
27	2.25	0.13	0.020	0.243	0.005	0.01
28	2.33	0.13	0.020	0.242	0.005	0.01
29	2.42	0.13	0.020	0.241	0.005	0.01
30	2.50	0.13	0.020	0.240	0.005	0.01
31	2.58	0.17	0.025	0.239	0.007	0.02
32	2.67	0.17	0.025	0.238	0.007	0.02
33	2.75	0.17	0.025	0.237	0.007	0.02
34	2.83	0.17	0.025	0.236	0.007	0.02
35	2.92	0.17	0.025	0.236	0.007	0.02
36	3.00	0.17	0.025	0.235	0.007	0.02
37	3.08	0.17	0.025	0.234	0.007	0.02
38	3.17	0.17	0.025	0.233	0.007	0.02
39	3.25	0.17	0.025	0.232	0.007	0.02
40	3.33	0.17	0.025	0.231	0.007	0.02
41	3.42	0.17	0.025	0.230	0.007	0.02
42	3.50	0.17	0.025	0.229	0.007	0.02
43	3.58	0.17	0.025	0.228	0.007	0.02
44	3.67	0.17	0.025	0.227	0.007	0.02
45	3.75	0.17	0.025	0.226	0.007	0.02
46	3.83	0.20	0.030	0.225	0.008	0.02
47	3.92	0.20	0.030	0.224	0.008	0.02
48	4.00	0.20	0.030	0.223	0.008	0.02
49	4.08	0.20	0.030	0.222	0.008	0.02
50	4.17	0.20	0.030	0.221	0.008	0.02
51	4.25	0.20	0.030	0.220	0.008	0.02
52	4.33	0.23	0.035	0.219	0.010	0.03
53	4.42	0.23	0.035	0.218	0.010	0.03
54	4.50	0.23	0.035	0.217	0.010	0.03
55	4.58	0.23	0.035	0.216	0.010	0.03
56	4.67	0.23	0.035	0.216	0.010	0.03
57	4.75	0.23	0.035	0.215	0.010	0.03
58	4.83	0.27	0.040	0.214	0.011	0.03
59	4.92	0.27	0.040	0.213	0.011	0.03
60	5.00	0.27	0.040	0.212	0.011	0.03
61	5.08	0.20	0.030	0.211	0.008	0.02
62	5.17	0.20	0.030	0.210	0.008	0.02
63	5.25	0.20	0.030	0.209	0.008	0.02
64	5.33	0.23	0.035	0.208	0.010	0.03
65	5.42	0.23	0.035	0.207	0.010	0.03
66	5.50	0.23	0.035	0.206	0.010	0.03
67	5.58	0.27	0.040	0.205	0.011	0.03
68	5.67	0.27	0.040	0.205	0.011	0.03
69	5.75	0.27	0.040	0.204	0.011	0.03
70	5.83	0.27	0.040	0.203	0.011	0.03
71	5.92	0.27	0.040	0.202	0.011	0.03
72	6.00	0.27	0.040	0.201	0.011	0.03
73	6.08	0.30	0.045	0.200	0.012	0.03
74	6.17	0.30	0.045	0.199	0.012	0.03
75	6.25	0.30	0.045	0.198	0.012	0.03
76	6.33	0.30	0.045	0.197	0.012	0.03
77	6.42	0.30	0.045	0.196	0.012	0.03
78	6.50	0.30	0.045	0.196	0.012	0.03
79	6.58	0.33	0.050	0.195	0.014	0.04
80	6.67	0.33	0.050	0.194	0.014	0.04
81	6.75	0.33	0.050	0.193	0.014	0.04
82	6.83	0.33	0.050	0.192	0.014	0.04
83	6.92	0.33	0.050	0.191	0.014	0.04
84	7.00	0.33	0.050	0.190	0.014	0.04
85	7.08	0.33	0.050	0.190	0.014	0.04
86	7.17	0.33	0.050	0.189	0.014	0.04
87	7.25	0.33	0.050	0.188	0.014	0.04
88	7.33	0.37	0.055	0.187	0.015	0.04
89	7.42	0.37	0.055	0.186	0.015	0.04
90	7.50	0.37	0.055	0.185	0.015	0.04
91	7.58	0.40	0.059	0.184	0.016	0.04

92	7.67	0.40	0.059	0.184	0.016	0.04
93	7.75	0.40	0.059	0.183	0.016	0.04
94	7.83	0.43	0.064	0.182	0.018	0.05
95	7.92	0.43	0.064	0.181	0.018	0.05
96	8.00	0.43	0.064	0.180	0.018	0.05
97	8.08	0.50	0.074	0.179	0.021	0.05
98	8.17	0.50	0.074	0.178	0.021	0.05
99	8.25	0.50	0.074	0.178	0.021	0.05
100	8.33	0.50	0.074	0.177	0.021	0.05
101	8.42	0.50	0.074	0.176	0.021	0.05
102	8.50	0.50	0.074	0.175	0.021	0.05
103	8.58	0.53	0.079	0.174	0.022	0.06
104	8.67	0.53	0.079	0.174	0.022	0.06
105	8.75	0.53	0.079	0.173	0.022	0.06
106	8.83	0.57	0.084	0.172	0.023	0.06
107	8.92	0.57	0.084	0.171	0.023	0.06
108	9.00	0.57	0.084	0.170	0.023	0.06
109	9.08	0.63	0.094	0.169	0.026	0.07
110	9.17	0.63	0.094	0.169	0.026	0.07
111	9.25	0.63	0.094	0.168	0.026	0.07
112	9.33	0.67	0.099	0.167	0.027	0.07
113	9.42	0.67	0.099	0.166	0.027	0.07
114	9.50	0.67	0.099	0.165	0.027	0.07
115	9.58	0.70	0.104	0.165	0.029	0.08
116	9.67	0.70	0.104	0.164	0.029	0.08
117	9.75	0.70	0.104	0.163	0.029	0.08
118	9.83	0.73	0.109	0.162	0.030	0.08
119	9.92	0.73	0.109	0.162	0.030	0.08
120	10.00	0.73	0.109	0.161	0.030	0.08
121	10.08	0.50	0.074	0.160	0.021	0.05
122	10.17	0.50	0.074	0.159	0.021	0.05
123	10.25	0.50	0.074	0.158	0.021	0.05
124	10.33	0.50	0.074	0.158	0.021	0.05
125	10.42	0.50	0.074	0.157	0.021	0.05
126	10.50	0.50	0.074	0.156	0.021	0.05
127	10.58	0.67	0.099	0.155	0.027	0.07
128	10.67	0.67	0.099	0.155	0.027	0.07
129	10.75	0.67	0.099	0.154	0.027	0.07
130	10.83	0.67	0.099	0.153	0.027	0.07
131	10.92	0.67	0.099	0.152	0.027	0.07
132	11.00	0.67	0.099	0.152	0.027	0.07
133	11.08	0.63	0.094	0.151	0.026	0.07
134	11.17	0.63	0.094	0.150	0.026	0.07
135	11.25	0.63	0.094	0.149	0.026	0.07
136	11.33	0.63	0.094	0.149	0.026	0.07
137	11.42	0.63	0.094	0.148	0.026	0.07
138	11.50	0.63	0.094	0.147	0.026	0.07
139	11.58	0.57	0.084	0.146	0.023	0.06
140	11.67	0.57	0.084	0.146	0.023	0.06
141	11.75	0.57	0.084	0.145	0.023	0.06
142	11.83	0.60	0.089	0.144	0.025	0.06
143	11.92	0.60	0.089	0.144	0.025	0.06
144	12.00	0.60	0.089	0.143	0.025	0.06
145	12.08	0.83	0.124	0.142	0.034	0.09
146	12.17	0.83	0.124	0.141	0.034	0.09
147	12.25	0.83	0.124	0.141	0.034	0.09
148	12.33	0.87	0.129	0.140	0.036	0.09
149	12.42	0.87	0.129	0.139	0.036	0.09
150	12.50	0.87	0.129	0.139	0.036	0.09
151	12.58	0.93	0.139	0.138	---	0.00
152	12.67	0.93	0.139	0.137	---	0.00
153	12.75	0.93	0.139	0.136	---	0.00
154	12.83	0.97	0.144	0.136	---	0.01
155	12.92	0.97	0.144	0.135	---	0.01
156	13.00	0.97	0.144	0.134	---	0.01
157	13.08	1.13	0.168	0.134	---	0.03
158	13.17	1.13	0.168	0.133	---	0.04
159	13.25	1.13	0.168	0.132	---	0.04
160	13.33	1.13	0.168	0.132	---	0.04
161	13.42	1.13	0.168	0.131	---	0.04
162	13.50	1.13	0.168	0.130	---	0.04

163	13.58	0.77	0.114	0.130	0.031	0.08
164	13.67	0.77	0.114	0.129	0.031	0.08
165	13.75	0.77	0.114	0.128	0.031	0.08
166	13.83	0.77	0.114	0.128	0.031	0.08
167	13.92	0.77	0.114	0.127	0.031	0.08
168	14.00	0.77	0.114	0.126	0.031	0.08
169	14.08	0.90	0.134	0.126	---	0.01
170	14.17	0.90	0.134	0.125	---	0.01
171	14.25	0.90	0.134	0.125	---	0.01
172	14.33	0.87	0.129	0.124	---	0.00
173	14.42	0.87	0.129	0.123	---	0.01
174	14.50	0.87	0.129	0.123	---	0.01
175	14.58	0.87	0.129	0.122	---	0.01
176	14.67	0.87	0.129	0.121	---	0.01
177	14.75	0.87	0.129	0.121	---	0.01
178	14.83	0.83	0.124	0.120	---	0.00
179	14.92	0.83	0.124	0.120	---	0.00
180	15.00	0.83	0.124	0.119	---	0.00
181	15.08	0.80	0.119	0.118	---	0.00
182	15.17	0.80	0.119	0.118	---	0.00
183	15.25	0.80	0.119	0.117	---	0.00
184	15.33	0.77	0.114	0.116	0.031	0.08
185	15.42	0.77	0.114	0.116	0.031	0.08
186	15.50	0.77	0.114	0.115	0.031	0.08
187	15.58	0.63	0.094	0.115	0.026	0.07
188	15.67	0.63	0.094	0.114	0.026	0.07
189	15.75	0.63	0.094	0.114	0.026	0.07
190	15.83	0.63	0.094	0.113	0.026	0.07
191	15.92	0.63	0.094	0.112	0.026	0.07
192	16.00	0.63	0.094	0.112	0.026	0.07
193	16.08	0.13	0.020	0.111	0.005	0.01
194	16.17	0.13	0.020	0.111	0.005	0.01
195	16.25	0.13	0.020	0.110	0.005	0.01
196	16.33	0.13	0.020	0.110	0.005	0.01
197	16.42	0.13	0.020	0.109	0.005	0.01
198	16.50	0.13	0.020	0.108	0.005	0.01
199	16.58	0.10	0.015	0.108	0.004	0.01
200	16.67	0.10	0.015	0.107	0.004	0.01
201	16.75	0.10	0.015	0.107	0.004	0.01
202	16.83	0.10	0.015	0.106	0.004	0.01
203	16.92	0.10	0.015	0.106	0.004	0.01
204	17.00	0.10	0.015	0.105	0.004	0.01
205	17.08	0.17	0.025	0.105	0.007	0.02
206	17.17	0.17	0.025	0.104	0.007	0.02
207	17.25	0.17	0.025	0.104	0.007	0.02
208	17.33	0.17	0.025	0.103	0.007	0.02
209	17.42	0.17	0.025	0.103	0.007	0.02
210	17.50	0.17	0.025	0.102	0.007	0.02
211	17.58	0.17	0.025	0.102	0.007	0.02
212	17.67	0.17	0.025	0.101	0.007	0.02
213	17.75	0.17	0.025	0.100	0.007	0.02
214	17.83	0.13	0.020	0.100	0.005	0.01
215	17.92	0.13	0.020	0.100	0.005	0.01
216	18.00	0.13	0.020	0.099	0.005	0.01
217	18.08	0.13	0.020	0.099	0.005	0.01
218	18.17	0.13	0.020	0.098	0.005	0.01
219	18.25	0.13	0.020	0.098	0.005	0.01
220	18.33	0.13	0.020	0.097	0.005	0.01
221	18.42	0.13	0.020	0.097	0.005	0.01
222	18.50	0.13	0.020	0.096	0.005	0.01
223	18.58	0.10	0.015	0.096	0.004	0.01
224	18.67	0.10	0.015	0.095	0.004	0.01
225	18.75	0.10	0.015	0.095	0.004	0.01
226	18.83	0.07	0.010	0.094	0.003	0.01
227	18.92	0.07	0.010	0.094	0.003	0.01
228	19.00	0.07	0.010	0.093	0.003	0.01
229	19.08	0.10	0.015	0.093	0.004	0.01
230	19.17	0.10	0.015	0.093	0.004	0.01
231	19.25	0.10	0.015	0.092	0.004	0.01
232	19.33	0.13	0.020	0.092	0.005	0.01
233	19.42	0.13	0.020	0.091	0.005	0.01

234	19.50	0.13	0.020	0.091	0.005	0.01
235	19.58	0.10	0.015	0.090	0.004	0.01
236	19.67	0.10	0.015	0.090	0.004	0.01
237	19.75	0.10	0.015	0.090	0.004	0.01
238	19.83	0.07	0.010	0.089	0.003	0.01
239	19.92	0.07	0.010	0.089	0.003	0.01
240	20.00	0.07	0.010	0.088	0.003	0.01
241	20.08	0.10	0.015	0.088	0.004	0.01
242	20.17	0.10	0.015	0.088	0.004	0.01
243	20.25	0.10	0.015	0.087	0.004	0.01
244	20.33	0.10	0.015	0.087	0.004	0.01
245	20.42	0.10	0.015	0.086	0.004	0.01
246	20.50	0.10	0.015	0.086	0.004	0.01
247	20.58	0.10	0.015	0.086	0.004	0.01
248	20.67	0.10	0.015	0.085	0.004	0.01
249	20.75	0.10	0.015	0.085	0.004	0.01
250	20.83	0.07	0.010	0.085	0.003	0.01
251	20.92	0.07	0.010	0.084	0.003	0.01
252	21.00	0.07	0.010	0.084	0.003	0.01
253	21.08	0.10	0.015	0.084	0.004	0.01
254	21.17	0.10	0.015	0.083	0.004	0.01
255	21.25	0.10	0.015	0.083	0.004	0.01
256	21.33	0.07	0.010	0.083	0.003	0.01
257	21.42	0.07	0.010	0.082	0.003	0.01
258	21.50	0.07	0.010	0.082	0.003	0.01
259	21.58	0.10	0.015	0.082	0.004	0.01
260	21.67	0.10	0.015	0.081	0.004	0.01
261	21.75	0.10	0.015	0.081	0.004	0.01
262	21.83	0.07	0.010	0.081	0.003	0.01
263	21.92	0.07	0.010	0.081	0.003	0.01
264	22.00	0.07	0.010	0.080	0.003	0.01
265	22.08	0.10	0.015	0.080	0.004	0.01
266	22.17	0.10	0.015	0.080	0.004	0.01
267	22.25	0.10	0.015	0.080	0.004	0.01
268	22.33	0.07	0.010	0.079	0.003	0.01
269	22.42	0.07	0.010	0.079	0.003	0.01
270	22.50	0.07	0.010	0.079	0.003	0.01
271	22.58	0.07	0.010	0.079	0.003	0.01
272	22.67	0.07	0.010	0.078	0.003	0.01
273	22.75	0.07	0.010	0.078	0.003	0.01
274	22.83	0.07	0.010	0.078	0.003	0.01
275	22.92	0.07	0.010	0.078	0.003	0.01
276	23.00	0.07	0.010	0.078	0.003	0.01
277	23.08	0.07	0.010	0.077	0.003	0.01
278	23.17	0.07	0.010	0.077	0.003	0.01
279	23.25	0.07	0.010	0.077	0.003	0.01
280	23.33	0.07	0.010	0.077	0.003	0.01
281	23.42	0.07	0.010	0.077	0.003	0.01
282	23.50	0.07	0.010	0.077	0.003	0.01
283	23.58	0.07	0.010	0.077	0.003	0.01
284	23.67	0.07	0.010	0.076	0.003	0.01
285	23.75	0.07	0.010	0.076	0.003	0.01
286	23.83	0.07	0.010	0.076	0.003	0.01
287	23.92	0.07	0.010	0.076	0.003	0.01
288	24.00	0.07	0.010	0.076	0.003	0.01
	Sum =	100.0			Sum =	8.4

Flood volume = Effective rainfall 0.70(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.54(In)
Total soil loss = 0.046(Ac.Ft)
Total rainfall = 1.24(In)
Flood volume = 2557.5 Cubic Feet
Total soil loss = 1984.3 Cubic Feet

Storm Event 2 Effective Rainfall = 2.347(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1 0.08	0.07	0.019	0.270	0.005	0.01
2 0.17	0.07	0.019	0.269	0.005	0.01

3	0.25	0.07	0.019	0.268	0.005	0.01
4	0.33	0.10	0.028	0.267	0.008	0.02
5	0.42	0.10	0.028	0.266	0.008	0.02
6	0.50	0.10	0.028	0.265	0.008	0.02
7	0.58	0.10	0.028	0.264	0.008	0.02
8	0.67	0.10	0.028	0.263	0.008	0.02
9	0.75	0.10	0.028	0.262	0.008	0.02
10	0.83	0.13	0.038	0.261	0.010	0.03
11	0.92	0.13	0.038	0.259	0.010	0.03
12	1.00	0.13	0.038	0.258	0.010	0.03
13	1.08	0.10	0.028	0.257	0.008	0.02
14	1.17	0.10	0.028	0.256	0.008	0.02
15	1.25	0.10	0.028	0.255	0.008	0.02
16	1.33	0.10	0.028	0.254	0.008	0.02
17	1.42	0.10	0.028	0.253	0.008	0.02
18	1.50	0.10	0.028	0.252	0.008	0.02
19	1.58	0.10	0.028	0.251	0.008	0.02
20	1.67	0.10	0.028	0.250	0.008	0.02
21	1.75	0.10	0.028	0.249	0.008	0.02
22	1.83	0.13	0.038	0.248	0.010	0.03
23	1.92	0.13	0.038	0.247	0.010	0.03
24	2.00	0.13	0.038	0.246	0.010	0.03
25	2.08	0.13	0.038	0.245	0.010	0.03
26	2.17	0.13	0.038	0.244	0.010	0.03
27	2.25	0.13	0.038	0.243	0.010	0.03
28	2.33	0.13	0.038	0.242	0.010	0.03
29	2.42	0.13	0.038	0.241	0.010	0.03
30	2.50	0.13	0.038	0.240	0.010	0.03
31	2.58	0.17	0.047	0.239	0.013	0.03
32	2.67	0.17	0.047	0.238	0.013	0.03
33	2.75	0.17	0.047	0.237	0.013	0.03
34	2.83	0.17	0.047	0.236	0.013	0.03
35	2.92	0.17	0.047	0.236	0.013	0.03
36	3.00	0.17	0.047	0.235	0.013	0.03
37	3.08	0.17	0.047	0.234	0.013	0.03
38	3.17	0.17	0.047	0.233	0.013	0.03
39	3.25	0.17	0.047	0.232	0.013	0.03
40	3.33	0.17	0.047	0.231	0.013	0.03
41	3.42	0.17	0.047	0.230	0.013	0.03
42	3.50	0.17	0.047	0.229	0.013	0.03
43	3.58	0.17	0.047	0.228	0.013	0.03
44	3.67	0.17	0.047	0.227	0.013	0.03
45	3.75	0.17	0.047	0.226	0.013	0.03
46	3.83	0.20	0.056	0.225	0.016	0.04
47	3.92	0.20	0.056	0.224	0.016	0.04
48	4.00	0.20	0.056	0.223	0.016	0.04
49	4.08	0.20	0.056	0.222	0.016	0.04
50	4.17	0.20	0.056	0.221	0.016	0.04
51	4.25	0.20	0.056	0.220	0.016	0.04
52	4.33	0.23	0.066	0.219	0.018	0.05
53	4.42	0.23	0.066	0.218	0.018	0.05
54	4.50	0.23	0.066	0.217	0.018	0.05
55	4.58	0.23	0.066	0.216	0.018	0.05
56	4.67	0.23	0.066	0.216	0.018	0.05
57	4.75	0.23	0.066	0.215	0.018	0.05
58	4.83	0.27	0.075	0.214	0.021	0.05
59	4.92	0.27	0.075	0.213	0.021	0.05
60	5.00	0.27	0.075	0.212	0.021	0.05
61	5.08	0.20	0.056	0.211	0.016	0.04
62	5.17	0.20	0.056	0.210	0.016	0.04
63	5.25	0.20	0.056	0.209	0.016	0.04
64	5.33	0.23	0.066	0.208	0.018	0.05
65	5.42	0.23	0.066	0.207	0.018	0.05
66	5.50	0.23	0.066	0.206	0.018	0.05
67	5.58	0.27	0.075	0.205	0.021	0.05
68	5.67	0.27	0.075	0.205	0.021	0.05
69	5.75	0.27	0.075	0.204	0.021	0.05
70	5.83	0.27	0.075	0.203	0.021	0.05
71	5.92	0.27	0.075	0.202	0.021	0.05
72	6.00	0.27	0.075	0.201	0.021	0.05
73	6.08	0.30	0.084	0.200	0.023	0.06

74	6.17	0.30	0.084	0.199	0.023	0.06
75	6.25	0.30	0.084	0.198	0.023	0.06
76	6.33	0.30	0.084	0.197	0.023	0.06
77	6.42	0.30	0.084	0.196	0.023	0.06
78	6.50	0.30	0.084	0.196	0.023	0.06
79	6.58	0.33	0.094	0.195	0.026	0.07
80	6.67	0.33	0.094	0.194	0.026	0.07
81	6.75	0.33	0.094	0.193	0.026	0.07
82	6.83	0.33	0.094	0.192	0.026	0.07
83	6.92	0.33	0.094	0.191	0.026	0.07
84	7.00	0.33	0.094	0.190	0.026	0.07
85	7.08	0.33	0.094	0.190	0.026	0.07
86	7.17	0.33	0.094	0.189	0.026	0.07
87	7.25	0.33	0.094	0.188	0.026	0.07
88	7.33	0.37	0.103	0.187	0.029	0.07
89	7.42	0.37	0.103	0.186	0.029	0.07
90	7.50	0.37	0.103	0.185	0.029	0.07
91	7.58	0.40	0.113	0.184	0.031	0.08
92	7.67	0.40	0.113	0.184	0.031	0.08
93	7.75	0.40	0.113	0.183	0.031	0.08
94	7.83	0.43	0.122	0.182	0.034	0.09
95	7.92	0.43	0.122	0.181	0.034	0.09
96	8.00	0.43	0.122	0.180	0.034	0.09
97	8.08	0.50	0.141	0.179	0.039	0.10
98	8.17	0.50	0.141	0.178	0.039	0.10
99	8.25	0.50	0.141	0.178	0.039	0.10
100	8.33	0.50	0.141	0.177	0.039	0.10
101	8.42	0.50	0.141	0.176	0.039	0.10
102	8.50	0.50	0.141	0.175	0.039	0.10
103	8.58	0.53	0.150	0.174	0.041	0.11
104	8.67	0.53	0.150	0.174	0.041	0.11
105	8.75	0.53	0.150	0.173	0.041	0.11
106	8.83	0.57	0.160	0.172	0.044	0.12
107	8.92	0.57	0.160	0.171	0.044	0.12
108	9.00	0.57	0.160	0.170	0.044	0.12
109	9.08	0.63	0.178	0.169	---	0.01
110	9.17	0.63	0.178	0.169	---	0.01
111	9.25	0.63	0.178	0.168	---	0.01
112	9.33	0.67	0.188	0.167	---	0.02
113	9.42	0.67	0.188	0.166	---	0.02
114	9.50	0.67	0.188	0.165	---	0.02
115	9.58	0.70	0.197	0.165	---	0.03
116	9.67	0.70	0.197	0.164	---	0.03
117	9.75	0.70	0.197	0.163	---	0.03
118	9.83	0.73	0.207	0.162	---	0.04
119	9.92	0.73	0.207	0.162	---	0.05
120	10.00	0.73	0.207	0.161	---	0.05
121	10.08	0.50	0.141	0.160	0.039	0.10
122	10.17	0.50	0.141	0.159	0.039	0.10
123	10.25	0.50	0.141	0.158	0.039	0.10
124	10.33	0.50	0.141	0.158	0.039	0.10
125	10.42	0.50	0.141	0.157	0.039	0.10
126	10.50	0.50	0.141	0.156	0.039	0.10
127	10.58	0.67	0.188	0.155	---	0.03
128	10.67	0.67	0.188	0.155	---	0.03
129	10.75	0.67	0.188	0.154	---	0.03
130	10.83	0.67	0.188	0.153	---	0.03
131	10.92	0.67	0.188	0.152	---	0.04
132	11.00	0.67	0.188	0.152	---	0.04
133	11.08	0.63	0.178	0.151	---	0.03
134	11.17	0.63	0.178	0.150	---	0.03
135	11.25	0.63	0.178	0.149	---	0.03
136	11.33	0.63	0.178	0.149	---	0.03
137	11.42	0.63	0.178	0.148	---	0.03
138	11.50	0.63	0.178	0.147	---	0.03
139	11.58	0.57	0.160	0.146	---	0.01
140	11.67	0.57	0.160	0.146	---	0.01
141	11.75	0.57	0.160	0.145	---	0.01
142	11.83	0.60	0.169	0.144	---	0.02
143	11.92	0.60	0.169	0.144	---	0.03
144	12.00	0.60	0.169	0.143	---	0.03

145	12.08	0.83	0.235	0.142	---	0.09
146	12.17	0.83	0.235	0.141	---	0.09
147	12.25	0.83	0.235	0.141	---	0.09
148	12.33	0.87	0.244	0.140	---	0.10
149	12.42	0.87	0.244	0.139	---	0.10
150	12.50	0.87	0.244	0.139	---	0.11
151	12.58	0.93	0.263	0.138	---	0.13
152	12.67	0.93	0.263	0.137	---	0.13
153	12.75	0.93	0.263	0.136	---	0.13
154	12.83	0.97	0.272	0.136	---	0.14
155	12.92	0.97	0.272	0.135	---	0.14
156	13.00	0.97	0.272	0.134	---	0.14
157	13.08	1.13	0.319	0.134	---	0.19
158	13.17	1.13	0.319	0.133	---	0.19
159	13.25	1.13	0.319	0.132	---	0.19
160	13.33	1.13	0.319	0.132	---	0.19
161	13.42	1.13	0.319	0.131	---	0.19
162	13.50	1.13	0.319	0.130	---	0.19
163	13.58	0.77	0.216	0.130	---	0.09
164	13.67	0.77	0.216	0.129	---	0.09
165	13.75	0.77	0.216	0.128	---	0.09
166	13.83	0.77	0.216	0.128	---	0.09
167	13.92	0.77	0.216	0.127	---	0.09
168	14.00	0.77	0.216	0.126	---	0.09
169	14.08	0.90	0.253	0.126	---	0.13
170	14.17	0.90	0.253	0.125	---	0.13
171	14.25	0.90	0.253	0.125	---	0.13
172	14.33	0.87	0.244	0.124	---	0.12
173	14.42	0.87	0.244	0.123	---	0.12
174	14.50	0.87	0.244	0.123	---	0.12
175	14.58	0.87	0.244	0.122	---	0.12
176	14.67	0.87	0.244	0.121	---	0.12
177	14.75	0.87	0.244	0.121	---	0.12
178	14.83	0.83	0.235	0.120	---	0.11
179	14.92	0.83	0.235	0.120	---	0.12
180	15.00	0.83	0.235	0.119	---	0.12
181	15.08	0.80	0.225	0.118	---	0.11
182	15.17	0.80	0.225	0.118	---	0.11
183	15.25	0.80	0.225	0.117	---	0.11
184	15.33	0.77	0.216	0.116	---	0.10
185	15.42	0.77	0.216	0.116	---	0.10
186	15.50	0.77	0.216	0.115	---	0.10
187	15.58	0.63	0.178	0.115	---	0.06
188	15.67	0.63	0.178	0.114	---	0.06
189	15.75	0.63	0.178	0.114	---	0.06
190	15.83	0.63	0.178	0.113	---	0.07
191	15.92	0.63	0.178	0.112	---	0.07
192	16.00	0.63	0.178	0.112	---	0.07
193	16.08	0.13	0.038	0.111	0.010	0.03
194	16.17	0.13	0.038	0.111	0.010	0.03
195	16.25	0.13	0.038	0.110	0.010	0.03
196	16.33	0.13	0.038	0.110	0.010	0.03
197	16.42	0.13	0.038	0.109	0.010	0.03
198	16.50	0.13	0.038	0.108	0.010	0.03
199	16.58	0.10	0.028	0.108	0.008	0.02
200	16.67	0.10	0.028	0.107	0.008	0.02
201	16.75	0.10	0.028	0.107	0.008	0.02
202	16.83	0.10	0.028	0.106	0.008	0.02
203	16.92	0.10	0.028	0.106	0.008	0.02
204	17.00	0.10	0.028	0.105	0.008	0.02
205	17.08	0.17	0.047	0.105	0.013	0.03
206	17.17	0.17	0.047	0.104	0.013	0.03
207	17.25	0.17	0.047	0.104	0.013	0.03
208	17.33	0.17	0.047	0.103	0.013	0.03
209	17.42	0.17	0.047	0.103	0.013	0.03
210	17.50	0.17	0.047	0.102	0.013	0.03
211	17.58	0.17	0.047	0.102	0.013	0.03
212	17.67	0.17	0.047	0.101	0.013	0.03
213	17.75	0.17	0.047	0.100	0.013	0.03
214	17.83	0.13	0.038	0.100	0.010	0.03
215	17.92	0.13	0.038	0.100	0.010	0.03

216	18.00	0.13	0.038	0.099	0.010	0.03
217	18.08	0.13	0.038	0.099	0.010	0.03
218	18.17	0.13	0.038	0.098	0.010	0.03
219	18.25	0.13	0.038	0.098	0.010	0.03
220	18.33	0.13	0.038	0.097	0.010	0.03
221	18.42	0.13	0.038	0.097	0.010	0.03
222	18.50	0.13	0.038	0.096	0.010	0.03
223	18.58	0.10	0.028	0.096	0.008	0.02
224	18.67	0.10	0.028	0.095	0.008	0.02
225	18.75	0.10	0.028	0.095	0.008	0.02
226	18.83	0.07	0.019	0.094	0.005	0.01
227	18.92	0.07	0.019	0.094	0.005	0.01
228	19.00	0.07	0.019	0.093	0.005	0.01
229	19.08	0.10	0.028	0.093	0.008	0.02
230	19.17	0.10	0.028	0.093	0.008	0.02
231	19.25	0.10	0.028	0.092	0.008	0.02
232	19.33	0.13	0.038	0.092	0.010	0.03
233	19.42	0.13	0.038	0.091	0.010	0.03
234	19.50	0.13	0.038	0.091	0.010	0.03
235	19.58	0.10	0.028	0.090	0.008	0.02
236	19.67	0.10	0.028	0.090	0.008	0.02
237	19.75	0.10	0.028	0.090	0.008	0.02
238	19.83	0.07	0.019	0.089	0.005	0.01
239	19.92	0.07	0.019	0.089	0.005	0.01
240	20.00	0.07	0.019	0.088	0.005	0.01
241	20.08	0.10	0.028	0.088	0.008	0.02
242	20.17	0.10	0.028	0.088	0.008	0.02
243	20.25	0.10	0.028	0.087	0.008	0.02
244	20.33	0.10	0.028	0.087	0.008	0.02
245	20.42	0.10	0.028	0.086	0.008	0.02
246	20.50	0.10	0.028	0.086	0.008	0.02
247	20.58	0.10	0.028	0.086	0.008	0.02
248	20.67	0.10	0.028	0.085	0.008	0.02
249	20.75	0.10	0.028	0.085	0.008	0.02
250	20.83	0.07	0.019	0.085	0.005	0.01
251	20.92	0.07	0.019	0.084	0.005	0.01
252	21.00	0.07	0.019	0.084	0.005	0.01
253	21.08	0.10	0.028	0.084	0.008	0.02
254	21.17	0.10	0.028	0.083	0.008	0.02
255	21.25	0.10	0.028	0.083	0.008	0.02
256	21.33	0.07	0.019	0.083	0.005	0.01
257	21.42	0.07	0.019	0.082	0.005	0.01
258	21.50	0.07	0.019	0.082	0.005	0.01
259	21.58	0.10	0.028	0.082	0.008	0.02
260	21.67	0.10	0.028	0.081	0.008	0.02
261	21.75	0.10	0.028	0.081	0.008	0.02
262	21.83	0.07	0.019	0.081	0.005	0.01
263	21.92	0.07	0.019	0.081	0.005	0.01
264	22.00	0.07	0.019	0.080	0.005	0.01
265	22.08	0.10	0.028	0.080	0.008	0.02
266	22.17	0.10	0.028	0.080	0.008	0.02
267	22.25	0.10	0.028	0.080	0.008	0.02
268	22.33	0.07	0.019	0.079	0.005	0.01
269	22.42	0.07	0.019	0.079	0.005	0.01
270	22.50	0.07	0.019	0.079	0.005	0.01
271	22.58	0.07	0.019	0.079	0.005	0.01
272	22.67	0.07	0.019	0.078	0.005	0.01
273	22.75	0.07	0.019	0.078	0.005	0.01
274	22.83	0.07	0.019	0.078	0.005	0.01
275	22.92	0.07	0.019	0.078	0.005	0.01
276	23.00	0.07	0.019	0.078	0.005	0.01
277	23.08	0.07	0.019	0.077	0.005	0.01
278	23.17	0.07	0.019	0.077	0.005	0.01
279	23.25	0.07	0.019	0.077	0.005	0.01
280	23.33	0.07	0.019	0.077	0.005	0.01
281	23.42	0.07	0.019	0.077	0.005	0.01
282	23.50	0.07	0.019	0.077	0.005	0.01
283	23.58	0.07	0.019	0.077	0.005	0.01
284	23.67	0.07	0.019	0.076	0.005	0.01
285	23.75	0.07	0.019	0.076	0.005	0.01
286	23.83	0.07	0.019	0.076	0.005	0.01

287	23.92	0.07	0.019	0.076	0.005	0.01
288	24.00	0.07	0.019	0.076	0.005	0.01
	Sum =	100.0			Sum =	14.4

Flood volume = Effective rainfall 1.20(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 1.15(In)
Total soil loss = 0.097(Ac.Ft)
Total rainfall = 2.35(In)
Flood volume = 4391.3 Cubic Feet
Total soil loss = 4214.3 Cubic Feet

Storm Event 1 Effective Rainfall = 6.520(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.052	0.270	0.014	0.04
2	0.17	0.07	0.052	0.269	0.014	0.04
3	0.25	0.07	0.052	0.268	0.014	0.04
4	0.33	0.10	0.078	0.267	0.022	0.06
5	0.42	0.10	0.078	0.266	0.022	0.06
6	0.50	0.10	0.078	0.265	0.022	0.06
7	0.58	0.10	0.078	0.264	0.022	0.06
8	0.67	0.10	0.078	0.263	0.022	0.06
9	0.75	0.10	0.078	0.262	0.022	0.06
10	0.83	0.13	0.104	0.261	0.029	0.08
11	0.92	0.13	0.104	0.259	0.029	0.08
12	1.00	0.13	0.104	0.258	0.029	0.08
13	1.08	0.10	0.078	0.257	0.022	0.06
14	1.17	0.10	0.078	0.256	0.022	0.06
15	1.25	0.10	0.078	0.255	0.022	0.06
16	1.33	0.10	0.078	0.254	0.022	0.06
17	1.42	0.10	0.078	0.253	0.022	0.06
18	1.50	0.10	0.078	0.252	0.022	0.06
19	1.58	0.10	0.078	0.251	0.022	0.06
20	1.67	0.10	0.078	0.250	0.022	0.06
21	1.75	0.10	0.078	0.249	0.022	0.06
22	1.83	0.13	0.104	0.248	0.029	0.08
23	1.92	0.13	0.104	0.247	0.029	0.08
24	2.00	0.13	0.104	0.246	0.029	0.08
25	2.08	0.13	0.104	0.245	0.029	0.08
26	2.17	0.13	0.104	0.244	0.029	0.08
27	2.25	0.13	0.104	0.243	0.029	0.08
28	2.33	0.13	0.104	0.242	0.029	0.08
29	2.42	0.13	0.104	0.241	0.029	0.08
30	2.50	0.13	0.104	0.240	0.029	0.08
31	2.58	0.17	0.130	0.239	0.036	0.09
32	2.67	0.17	0.130	0.238	0.036	0.09
33	2.75	0.17	0.130	0.237	0.036	0.09
34	2.83	0.17	0.130	0.236	0.036	0.09
35	2.92	0.17	0.130	0.236	0.036	0.09
36	3.00	0.17	0.130	0.235	0.036	0.09
37	3.08	0.17	0.130	0.234	0.036	0.09
38	3.17	0.17	0.130	0.233	0.036	0.09
39	3.25	0.17	0.130	0.232	0.036	0.09
40	3.33	0.17	0.130	0.231	0.036	0.09
41	3.42	0.17	0.130	0.230	0.036	0.09
42	3.50	0.17	0.130	0.229	0.036	0.09
43	3.58	0.17	0.130	0.228	0.036	0.09
44	3.67	0.17	0.130	0.227	0.036	0.09
45	3.75	0.17	0.130	0.226	0.036	0.09
46	3.83	0.20	0.156	0.225	0.043	0.11
47	3.92	0.20	0.156	0.224	0.043	0.11
48	4.00	0.20	0.156	0.223	0.043	0.11
49	4.08	0.20	0.156	0.222	0.043	0.11
50	4.17	0.20	0.156	0.221	0.043	0.11
51	4.25	0.20	0.156	0.220	0.043	0.11
52	4.33	0.23	0.183	0.219	0.050	0.13
53	4.42	0.23	0.183	0.218	0.050	0.13
54	4.50	0.23	0.183	0.217	0.050	0.13
55	4.58	0.23	0.183	0.216	0.050	0.13

56	4.67	0.23	0.183	0.216	0.050	0.13
57	4.75	0.23	0.183	0.215	0.050	0.13
58	4.83	0.27	0.209	0.214	0.058	0.15
59	4.92	0.27	0.209	0.213	0.058	0.15
60	5.00	0.27	0.209	0.212	0.058	0.15
61	5.08	0.20	0.156	0.211	0.043	0.11
62	5.17	0.20	0.156	0.210	0.043	0.11
63	5.25	0.20	0.156	0.209	0.043	0.11
64	5.33	0.23	0.183	0.208	0.050	0.13
65	5.42	0.23	0.183	0.207	0.050	0.13
66	5.50	0.23	0.183	0.206	0.050	0.13
67	5.58	0.27	0.209	0.205	---	0.00
68	5.67	0.27	0.209	0.205	---	0.00
69	5.75	0.27	0.209	0.204	---	0.01
70	5.83	0.27	0.209	0.203	---	0.01
71	5.92	0.27	0.209	0.202	---	0.01
72	6.00	0.27	0.209	0.201	---	0.01
73	6.08	0.30	0.235	0.200	---	0.03
74	6.17	0.30	0.235	0.199	---	0.04
75	6.25	0.30	0.235	0.198	---	0.04
76	6.33	0.30	0.235	0.197	---	0.04
77	6.42	0.30	0.235	0.196	---	0.04
78	6.50	0.30	0.235	0.196	---	0.04
79	6.58	0.33	0.261	0.195	---	0.07
80	6.67	0.33	0.261	0.194	---	0.07
81	6.75	0.33	0.261	0.193	---	0.07
82	6.83	0.33	0.261	0.192	---	0.07
83	6.92	0.33	0.261	0.191	---	0.07
84	7.00	0.33	0.261	0.190	---	0.07
85	7.08	0.33	0.261	0.190	---	0.07
86	7.17	0.33	0.261	0.189	---	0.07
87	7.25	0.33	0.261	0.188	---	0.07
88	7.33	0.37	0.287	0.187	---	0.10
89	7.42	0.37	0.287	0.186	---	0.10
90	7.50	0.37	0.287	0.185	---	0.10
91	7.58	0.40	0.313	0.184	---	0.13
92	7.67	0.40	0.313	0.184	---	0.13
93	7.75	0.40	0.313	0.183	---	0.13
94	7.83	0.43	0.339	0.182	---	0.16
95	7.92	0.43	0.339	0.181	---	0.16
96	8.00	0.43	0.339	0.180	---	0.16
97	8.08	0.50	0.391	0.179	---	0.21
98	8.17	0.50	0.391	0.178	---	0.21
99	8.25	0.50	0.391	0.178	---	0.21
100	8.33	0.50	0.391	0.177	---	0.21
101	8.42	0.50	0.391	0.176	---	0.22
102	8.50	0.50	0.391	0.175	---	0.22
103	8.58	0.53	0.417	0.174	---	0.24
104	8.67	0.53	0.417	0.174	---	0.24
105	8.75	0.53	0.417	0.173	---	0.24
106	8.83	0.57	0.443	0.172	---	0.27
107	8.92	0.57	0.443	0.171	---	0.27
108	9.00	0.57	0.443	0.170	---	0.27
109	9.08	0.63	0.496	0.169	---	0.33
110	9.17	0.63	0.496	0.169	---	0.33
111	9.25	0.63	0.496	0.168	---	0.33
112	9.33	0.67	0.522	0.167	---	0.35
113	9.42	0.67	0.522	0.166	---	0.36
114	9.50	0.67	0.522	0.165	---	0.36
115	9.58	0.70	0.548	0.165	---	0.38
116	9.67	0.70	0.548	0.164	---	0.38
117	9.75	0.70	0.548	0.163	---	0.38
118	9.83	0.73	0.574	0.162	---	0.41
119	9.92	0.73	0.574	0.162	---	0.41
120	10.00	0.73	0.574	0.161	---	0.41
121	10.08	0.50	0.391	0.160	---	0.23
122	10.17	0.50	0.391	0.159	---	0.23
123	10.25	0.50	0.391	0.158	---	0.23
124	10.33	0.50	0.391	0.158	---	0.23
125	10.42	0.50	0.391	0.157	---	0.23
126	10.50	0.50	0.391	0.156	---	0.24

127	10.58	0.67	0.522	0.155	---	0.37
128	10.67	0.67	0.522	0.155	---	0.37
129	10.75	0.67	0.522	0.154	---	0.37
130	10.83	0.67	0.522	0.153	---	0.37
131	10.92	0.67	0.522	0.152	---	0.37
132	11.00	0.67	0.522	0.152	---	0.37
133	11.08	0.63	0.496	0.151	---	0.34
134	11.17	0.63	0.496	0.150	---	0.35
135	11.25	0.63	0.496	0.149	---	0.35
136	11.33	0.63	0.496	0.149	---	0.35
137	11.42	0.63	0.496	0.148	---	0.35
138	11.50	0.63	0.496	0.147	---	0.35
139	11.58	0.57	0.443	0.146	---	0.30
140	11.67	0.57	0.443	0.146	---	0.30
141	11.75	0.57	0.443	0.145	---	0.30
142	11.83	0.60	0.469	0.144	---	0.33
143	11.92	0.60	0.469	0.144	---	0.33
144	12.00	0.60	0.469	0.143	---	0.33
145	12.08	0.83	0.652	0.142	---	0.51
146	12.17	0.83	0.652	0.141	---	0.51
147	12.25	0.83	0.652	0.141	---	0.51
148	12.33	0.87	0.678	0.140	---	0.54
149	12.42	0.87	0.678	0.139	---	0.54
150	12.50	0.87	0.678	0.139	---	0.54
151	12.58	0.93	0.730	0.138	---	0.59
152	12.67	0.93	0.730	0.137	---	0.59
153	12.75	0.93	0.730	0.136	---	0.59
154	12.83	0.97	0.756	0.136	---	0.62
155	12.92	0.97	0.756	0.135	---	0.62
156	13.00	0.97	0.756	0.134	---	0.62
157	13.08	1.13	0.887	0.134	---	0.75
158	13.17	1.13	0.887	0.133	---	0.75
159	13.25	1.13	0.887	0.132	---	0.75
160	13.33	1.13	0.887	0.132	---	0.76
161	13.42	1.13	0.887	0.131	---	0.76
162	13.50	1.13	0.887	0.130	---	0.76
163	13.58	0.77	0.600	0.130	---	0.47
164	13.67	0.77	0.600	0.129	---	0.47
165	13.75	0.77	0.600	0.128	---	0.47
166	13.83	0.77	0.600	0.128	---	0.47
167	13.92	0.77	0.600	0.127	---	0.47
168	14.00	0.77	0.600	0.126	---	0.47
169	14.08	0.90	0.704	0.126	---	0.58
170	14.17	0.90	0.704	0.125	---	0.58
171	14.25	0.90	0.704	0.125	---	0.58
172	14.33	0.87	0.678	0.124	---	0.55
173	14.42	0.87	0.678	0.123	---	0.55
174	14.50	0.87	0.678	0.123	---	0.56
175	14.58	0.87	0.678	0.122	---	0.56
176	14.67	0.87	0.678	0.121	---	0.56
177	14.75	0.87	0.678	0.121	---	0.56
178	14.83	0.83	0.652	0.120	---	0.53
179	14.92	0.83	0.652	0.120	---	0.53
180	15.00	0.83	0.652	0.119	---	0.53
181	15.08	0.80	0.626	0.118	---	0.51
182	15.17	0.80	0.626	0.118	---	0.51
183	15.25	0.80	0.626	0.117	---	0.51
184	15.33	0.77	0.600	0.116	---	0.48
185	15.42	0.77	0.600	0.116	---	0.48
186	15.50	0.77	0.600	0.115	---	0.48
187	15.58	0.63	0.496	0.115	---	0.38
188	15.67	0.63	0.496	0.114	---	0.38
189	15.75	0.63	0.496	0.114	---	0.38
190	15.83	0.63	0.496	0.113	---	0.38
191	15.92	0.63	0.496	0.112	---	0.38
192	16.00	0.63	0.496	0.112	---	0.38
193	16.08	0.13	0.104	0.111	0.029	0.08
194	16.17	0.13	0.104	0.111	0.029	0.08
195	16.25	0.13	0.104	0.110	0.029	0.08
196	16.33	0.13	0.104	0.110	0.029	0.08
197	16.42	0.13	0.104	0.109	0.029	0.08

198	16.50	0.13	0.104	0.108	0.029	0.08
199	16.58	0.10	0.078	0.108	0.022	0.06
200	16.67	0.10	0.078	0.107	0.022	0.06
201	16.75	0.10	0.078	0.107	0.022	0.06
202	16.83	0.10	0.078	0.106	0.022	0.06
203	16.92	0.10	0.078	0.106	0.022	0.06
204	17.00	0.10	0.078	0.105	0.022	0.06
205	17.08	0.17	0.130	0.105	---	0.03
206	17.17	0.17	0.130	0.104	---	0.03
207	17.25	0.17	0.130	0.104	---	0.03
208	17.33	0.17	0.130	0.103	---	0.03
209	17.42	0.17	0.130	0.103	---	0.03
210	17.50	0.17	0.130	0.102	---	0.03
211	17.58	0.17	0.130	0.102	---	0.03
212	17.67	0.17	0.130	0.101	---	0.03
213	17.75	0.17	0.130	0.100	---	0.03
214	17.83	0.13	0.104	0.100	---	0.00
215	17.92	0.13	0.104	0.100	---	0.00
216	18.00	0.13	0.104	0.099	---	0.01
217	18.08	0.13	0.104	0.099	---	0.01
218	18.17	0.13	0.104	0.098	---	0.01
219	18.25	0.13	0.104	0.098	---	0.01
220	18.33	0.13	0.104	0.097	---	0.01
221	18.42	0.13	0.104	0.097	---	0.01
222	18.50	0.13	0.104	0.096	---	0.01
223	18.58	0.10	0.078	0.096	0.022	0.06
224	18.67	0.10	0.078	0.095	0.022	0.06
225	18.75	0.10	0.078	0.095	0.022	0.06
226	18.83	0.07	0.052	0.094	0.014	0.04
227	18.92	0.07	0.052	0.094	0.014	0.04
228	19.00	0.07	0.052	0.093	0.014	0.04
229	19.08	0.10	0.078	0.093	0.022	0.06
230	19.17	0.10	0.078	0.093	0.022	0.06
231	19.25	0.10	0.078	0.092	0.022	0.06
232	19.33	0.13	0.104	0.092	---	0.01
233	19.42	0.13	0.104	0.091	---	0.01
234	19.50	0.13	0.104	0.091	---	0.01
235	19.58	0.10	0.078	0.090	0.022	0.06
236	19.67	0.10	0.078	0.090	0.022	0.06
237	19.75	0.10	0.078	0.090	0.022	0.06
238	19.83	0.07	0.052	0.089	0.014	0.04
239	19.92	0.07	0.052	0.089	0.014	0.04
240	20.00	0.07	0.052	0.088	0.014	0.04
241	20.08	0.10	0.078	0.088	0.022	0.06
242	20.17	0.10	0.078	0.088	0.022	0.06
243	20.25	0.10	0.078	0.087	0.022	0.06
244	20.33	0.10	0.078	0.087	0.022	0.06
245	20.42	0.10	0.078	0.086	0.022	0.06
246	20.50	0.10	0.078	0.086	0.022	0.06
247	20.58	0.10	0.078	0.086	0.022	0.06
248	20.67	0.10	0.078	0.085	0.022	0.06
249	20.75	0.10	0.078	0.085	0.022	0.06
250	20.83	0.07	0.052	0.085	0.014	0.04
251	20.92	0.07	0.052	0.084	0.014	0.04
252	21.00	0.07	0.052	0.084	0.014	0.04
253	21.08	0.10	0.078	0.084	0.022	0.06
254	21.17	0.10	0.078	0.083	0.022	0.06
255	21.25	0.10	0.078	0.083	0.022	0.06
256	21.33	0.07	0.052	0.083	0.014	0.04
257	21.42	0.07	0.052	0.082	0.014	0.04
258	21.50	0.07	0.052	0.082	0.014	0.04
259	21.58	0.10	0.078	0.082	0.022	0.06
260	21.67	0.10	0.078	0.081	0.022	0.06
261	21.75	0.10	0.078	0.081	0.022	0.06
262	21.83	0.07	0.052	0.081	0.014	0.04
263	21.92	0.07	0.052	0.081	0.014	0.04
264	22.00	0.07	0.052	0.080	0.014	0.04
265	22.08	0.10	0.078	0.080	0.022	0.06
266	22.17	0.10	0.078	0.080	0.022	0.06
267	22.25	0.10	0.078	0.080	0.022	0.06
268	22.33	0.07	0.052	0.079	0.014	0.04

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269  22.42     0.07      0.052         0.079     0.014         0.04
270  22.50     0.07      0.052         0.079     0.014         0.04
271  22.58     0.07      0.052         0.079     0.014         0.04
272  22.67     0.07      0.052         0.078     0.014         0.04
273  22.75     0.07      0.052         0.078     0.014         0.04
274  22.83     0.07      0.052         0.078     0.014         0.04
275  22.92     0.07      0.052         0.078     0.014         0.04
276  23.00     0.07      0.052         0.078     0.014         0.04
277  23.08     0.07      0.052         0.077     0.014         0.04
278  23.17     0.07      0.052         0.077     0.014         0.04
279  23.25     0.07      0.052         0.077     0.014         0.04
280  23.33     0.07      0.052         0.077     0.014         0.04
281  23.42     0.07      0.052         0.077     0.014         0.04
282  23.50     0.07      0.052         0.077     0.014         0.04
283  23.58     0.07      0.052         0.077     0.014         0.04
284  23.67     0.07      0.052         0.076     0.014         0.04
285  23.75     0.07      0.052         0.076     0.014         0.04
286  23.83     0.07      0.052         0.076     0.014         0.04
287  23.92     0.07      0.052         0.076     0.014         0.04
288  24.00     0.07      0.052         0.076     0.014         0.04
    Sum =     100.0                                   Sum =    52.9
      Flood volume = Effective rainfall      4.41(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
      Total soil loss =      2.11(In)
      Total soil loss =     0.177(Ac.Ft)
      Total rainfall =      6.52(In)
      Flood volume =       16173.0 Cubic Feet
      Total soil loss =        7731.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.770(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       24 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0001      0.01  Q         |         |         |         |
   0+15       0.0001      0.01  Q         |         |         |         |
   0+20       0.0002      0.01  Q         |         |         |         |
   0+25       0.0002      0.01  Q         |         |         |         |
   0+30       0.0003      0.01  Q         |         |         |         |
   0+35       0.0003      0.01  Q         |         |         |         |
   0+40       0.0004      0.01  Q         |         |         |         |
   0+45       0.0005      0.01  Q         |         |         |         |
   0+50       0.0005      0.01  Q         |         |         |         |
   0+55       0.0006      0.01  Q         |         |         |         |
   1+ 0       0.0007      0.01  Q         |         |         |         |
   1+ 5       0.0007      0.01  Q         |         |         |         |
   1+10       0.0008      0.01  Q         |         |         |         |
   1+15       0.0009      0.01  Q         |         |         |         |
   1+20       0.0009      0.01  Q         |         |         |         |
   1+25       0.0010      0.01  Q         |         |         |         |
   1+30       0.0010      0.01  Q         |         |         |         |
   1+35       0.0011      0.01  Q         |         |         |         |
   1+40       0.0012      0.01  Q         |         |         |         |
   1+45       0.0012      0.01  Q         |         |         |         |
   1+50       0.0013      0.01  Q         |         |         |         |
   1+55       0.0014      0.01  Q         |         |         |         |
   2+ 0       0.0015      0.01  Q         |         |         |         |
   2+ 5       0.0015      0.01  Q         |         |         |         |
   2+10       0.0016      0.01  Q         |         |         |         |
   2+15       0.0017      0.01  Q         |         |         |         |
   2+20       0.0018      0.01  Q         |         |         |         |
   2+25       0.0019      0.01  Q         |         |         |         |
   2+30       0.0019      0.01  Q         |         |         |         |
   2+35       0.0020      0.01  Q         |         |         |         |
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2+40	0.0021	0.01	Q	|	|	|	|
2+45	0.0022	0.01	Q	|	|	|	|
2+50	0.0023	0.01	Q	|	|	|	|
2+55	0.0024	0.01	Q	|	|	|	|
3+ 0	0.0025	0.01	Q	|	|	|	|
3+ 5	0.0026	0.01	Q	|	|	|	|
3+10	0.0027	0.01	Q	|	|	|	|
3+15	0.0028	0.01	Q	|	|	|	|
3+20	0.0029	0.01	Q	|	|	|	|
3+25	0.0030	0.01	Q	|	|	|	|
3+30	0.0031	0.01	Q	|	|	|	|
3+35	0.0032	0.01	Q	|	|	|	|
3+40	0.0033	0.01	Q	|	|	|	|
3+45	0.0034	0.01	Q	|	|	|	|
3+50	0.0035	0.02	Q	|	|	|	|
3+55	0.0036	0.02	Q	|	|	|	|
4+ 0	0.0038	0.02	Q	|	|	|	|
4+ 5	0.0039	0.02	Q	|	|	|	|
4+10	0.0040	0.02	Q	|	|	|	|
4+15	0.0041	0.02	Q	|	|	|	|
4+20	0.0042	0.02	Q	|	|	|	|
4+25	0.0044	0.02	Q	|	|	|	|
4+30	0.0045	0.02	Q	|	|	|	|
4+35	0.0047	0.02	Q	|	|	|	|
4+40	0.0048	0.02	Q	|	|	|	|
4+45	0.0049	0.02	Q	|	|	|	|
4+50	0.0051	0.02	Q	|	|	|	|
4+55	0.0053	0.02	Q	|	|	|	|
5+ 0	0.0054	0.02	Q	|	|	|	|
5+ 5	0.0055	0.02	Q	|	|	|	|
5+10	0.0057	0.02	Q	|	|	|	|
5+15	0.0058	0.02	Q	|	|	|	|
5+20	0.0059	0.02	Q	|	|	|	|
5+25	0.0061	0.02	Q	|	|	|	|
5+30	0.0062	0.02	Q	|	|	|	|
5+35	0.0063	0.02	Q	|	|	|	|
5+40	0.0065	0.02	Q	|	|	|	|
5+45	0.0067	0.02	Q	|	|	|	|
5+50	0.0068	0.02	Q	|	|	|	|
5+55	0.0070	0.02	Q	|	|	|	|
6+ 0	0.0071	0.02	Q	|	|	|	|
6+ 5	0.0073	0.02	Q	|	|	|	|
6+10	0.0075	0.03	Q	|	|	|	|
6+15	0.0077	0.03	Q	|	|	|	|
6+20	0.0078	0.03	Q	|	|	|	|
6+25	0.0080	0.03	Q	|	|	|	|
6+30	0.0082	0.03	Q	|	|	|	|
6+35	0.0084	0.03	Q	|	|	|	|
6+40	0.0086	0.03	Q	|	|	|	|
6+45	0.0088	0.03	Q	|	|	|	|
6+50	0.0090	0.03	Q	|	|	|	|
6+55	0.0092	0.03	Q	|	|	|	|
7+ 0	0.0094	0.03	Q	|	|	|	|
7+ 5	0.0096	0.03	Q	|	|	|	|
7+10	0.0098	0.03	Q	|	|	|	|
7+15	0.0100	0.03	Q	|	|	|	|
7+20	0.0102	0.03	Q	|	|	|	|
7+25	0.0104	0.03	Q	|	|	|	|
7+30	0.0106	0.03	Q	|	|	|	|
7+35	0.0109	0.03	Q	|	|	|	|
7+40	0.0111	0.03	Q	|	|	|	|
7+45	0.0113	0.03	Q	|	|	|	|
7+50	0.0116	0.04	Q	|	|	|	|
7+55	0.0118	0.04	Q	|	|	|	|
8+ 0	0.0121	0.04	Q	|	|	|	|
8+ 5	0.0124	0.04	Q	|	|	|	|
8+10	0.0127	0.04	Q	|	|	|	|
8+15	0.0130	0.04	Q	|	|	|	|
8+20	0.0133	0.04	Q	|	|	|	|
8+25	0.0136	0.04	Q	|	|	|	|
8+30	0.0139	0.04	Q	|	|	|	|

8+35	0.0142	0.04	Q	|	|	|	|
8+40	0.0145	0.05	Q	|	|	|	|
8+45	0.0148	0.05	QV	|	|	|	|
8+50	0.0151	0.05	QV	|	|	|	|
8+55	0.0155	0.05	QV	|	|	|	|
9+ 0	0.0158	0.05	QV	|	|	|	|
9+ 5	0.0162	0.05	QV	|	|	|	|
9+10	0.0166	0.05	QV	|	|	|	|
9+15	0.0169	0.05	QV	|	|	|	|
9+20	0.0173	0.06	QV	|	|	|	|
9+25	0.0177	0.06	QV	|	|	|	|
9+30	0.0181	0.06	QV	|	|	|	|
9+35	0.0185	0.06	QV	|	|	|	|
9+40	0.0189	0.06	QV	|	|	|	|
9+45	0.0194	0.06	QV	|	|	|	|
9+50	0.0198	0.06	QV	|	|	|	|
9+55	0.0202	0.06	QV	|	|	|	|
10+ 0	0.0207	0.06	QV	|	|	|	|
10+ 5	0.0210	0.05	QV	|	|	|	|
10+10	0.0213	0.04	QV	|	|	|	|
10+15	0.0216	0.04	QV	|	|	|	|
10+20	0.0219	0.04	QV	|	|	|	|
10+25	0.0222	0.04	QV	|	|	|	|
10+30	0.0225	0.04	QV	|	|	|	|
10+35	0.0229	0.05	QV	|	|	|	|
10+40	0.0233	0.06	QV	|	|	|	|
10+45	0.0237	0.06	QV	|	|	|	|
10+50	0.0241	0.06	QV	|	|	|	|
10+55	0.0245	0.06	QV	|	|	|	|
11+ 0	0.0249	0.06	QV	|	|	|	|
11+ 5	0.0252	0.06	QV	|	|	|	|
11+10	0.0256	0.05	QV	|	|	|	|
11+15	0.0260	0.05	QV	|	|	|	|
11+20	0.0264	0.05	QV	|	|	|	|
11+25	0.0267	0.05	QV	|	|	|	|
11+30	0.0271	0.05	QV	|	|	|	|
11+35	0.0275	0.05	QV	|	|	|	|
11+40	0.0278	0.05	QV	|	|	|	|
11+45	0.0282	0.05	QV	|	|	|	|
11+50	0.0285	0.05	QV	|	|	|	|
11+55	0.0289	0.05	QV	|	|	|	|
12+ 0	0.0292	0.05	QV	|	|	|	|
12+ 5	0.0297	0.06	Q V	|	|	|	|
12+10	0.0302	0.07	Q V	|	|	|	|
12+15	0.0306	0.07	Q V	|	|	|	|
12+20	0.0312	0.07	Q V	|	|	|	|
12+25	0.0317	0.07	Q V	|	|	|	|
12+30	0.0322	0.07	Q V	|	|	|	|
12+35	0.0327	0.08	Q V	|	|	|	|
12+40	0.0333	0.08	Q V	|	|	|	|
12+45	0.0338	0.08	Q V	|	|	|	|
12+50	0.0344	0.08	Q V	|	|	|	|
12+55	0.0350	0.08	Q V	|	|	|	|
13+ 0	0.0356	0.08	Q V	|	|	|	|
13+ 5	0.0362	0.09	Q V	|	|	|	|
13+10	0.0369	0.10	Q V	|	|	|	|
13+15	0.0371	0.04	Q V	|	|	|	|
13+20	0.0372	0.01	Q V	|	|	|	|
13+25	0.0372	0.00	Q V	|	|	|	|
13+30	0.0372	0.00	Q V	|	|	|	|
13+35	0.0375	0.04	Q V	|	|	|	|
13+40	0.0379	0.06	Q V	|	|	|	|
13+45	0.0384	0.07	Q V	|	|	|	|
13+50	0.0388	0.07	Q V	|	|	|	|
13+55	0.0393	0.07	Q V	|	|	|	|
14+ 0	0.0398	0.07	Q V	|	|	|	|
14+ 5	0.0403	0.07	Q V	|	|	|	|
14+10	0.0408	0.08	Q V	|	|	|	|
14+15	0.0413	0.08	Q V	|	|	|	|
14+20	0.0418	0.08	Q V	|	|	|	|
14+25	0.0424	0.08	Q V	|	|	|	|

14+30	0.0429	0.07	Q V	|	|	|	|
14+35	0.0434	0.07	Q V	|	|	|	|
14+40	0.0439	0.07	Q V	|	|	|	|
14+45	0.0444	0.07	Q V	|	|	|	|
14+50	0.0449	0.07	Q V	|	|	|	|
14+55	0.0454	0.07	Q V	|	|	|	|
15+ 0	0.0459	0.07	Q V	|	|	|	|
15+ 5	0.0464	0.07	Q V	|	|	|	|
15+10	0.0469	0.07	Q V	|	|	|	|
15+15	0.0474	0.07	Q V	|	|	|	|
15+20	0.0478	0.07	Q V	|	|	|	|
15+25	0.0483	0.07	Q V	|	|	|	|
15+30	0.0488	0.07	Q V	|	|	|	|
15+35	0.0492	0.06	Q V	|	|	|	|
15+40	0.0495	0.06	Q V	|	|	|	|
15+45	0.0499	0.05	Q V	|	|	|	|
15+50	0.0503	0.05	Q V	|	|	|	|
15+55	0.0507	0.05	Q V	|	|	|	|
16+ 0	0.0511	0.05	Q V	|	|	|	|
16+ 5	0.0512	0.03	Q V	|	|	|	|
16+10	0.0513	0.01	Q V	|	|	|	|
16+15	0.0514	0.01	Q V	|	|	|	|
16+20	0.0515	0.01	Q V	|	|	|	|
16+25	0.0516	0.01	Q V	|	|	|	|
16+30	0.0517	0.01	Q V	|	|	|	|
16+35	0.0517	0.01	Q V	|	|	|	|
16+40	0.0518	0.01	Q V	|	|	|	|
16+45	0.0518	0.01	Q V	|	|	|	|
16+50	0.0519	0.01	Q V	|	|	|	|
16+55	0.0520	0.01	Q V	|	|	|	|
17+ 0	0.0520	0.01	Q V	|	|	|	|
17+ 5	0.0521	0.01	Q V	|	|	|	|
17+10	0.0522	0.01	Q V	|	|	|	|
17+15	0.0523	0.01	Q V	|	|	|	|
17+20	0.0524	0.01	Q V	|	|	|	|
17+25	0.0525	0.01	Q V	|	|	|	|
17+30	0.0526	0.01	Q V	|	|	|	|
17+35	0.0527	0.01	Q V	|	|	|	|
17+40	0.0528	0.01	Q V	|	|	|	|
17+45	0.0529	0.01	Q V	|	|	|	|
17+50	0.0530	0.01	Q V	|	|	|	|
17+55	0.0531	0.01	Q V	|	|	|	|
18+ 0	0.0531	0.01	Q V	|	|	|	|
18+ 5	0.0532	0.01	Q V	|	|	|	|
18+10	0.0533	0.01	Q V	|	|	|	|
18+15	0.0534	0.01	Q V	|	|	|	|
18+20	0.0535	0.01	Q V	|	|	|	|
18+25	0.0535	0.01	Q V	|	|	|	|
18+30	0.0536	0.01	Q V	|	|	|	|
18+35	0.0537	0.01	Q V	|	|	|	|
18+40	0.0538	0.01	Q V	|	|	|	|
18+45	0.0538	0.01	Q V	|	|	|	|
18+50	0.0539	0.01	Q V	|	|	|	|
18+55	0.0539	0.01	Q V	|	|	|	|
19+ 0	0.0539	0.01	Q V	|	|	|	|
19+ 5	0.0540	0.01	Q V	|	|	|	|
19+10	0.0541	0.01	Q V	|	|	|	|
19+15	0.0541	0.01	Q V	|	|	|	|
19+20	0.0542	0.01	Q V	|	|	|	|
19+25	0.0543	0.01	Q V	|	|	|	|
19+30	0.0543	0.01	Q V	|	|	|	|
19+35	0.0544	0.01	Q V	|	|	|	|
19+40	0.0545	0.01	Q V	|	|	|	|
19+45	0.0545	0.01	Q V	|	|	|	|
19+50	0.0546	0.01	Q V	|	|	|	|
19+55	0.0546	0.01	Q V	|	|	|	|
20+ 0	0.0547	0.01	Q V	|	|	|	|
20+ 5	0.0547	0.01	Q V	|	|	|	|
20+10	0.0548	0.01	Q V	|	|	|	|
20+15	0.0548	0.01	Q V	|	|	|	|
20+20	0.0549	0.01	Q V	|	|	|	|

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20+25       0.0549      0.01  Q  V      |          |          |          |
20+30       0.0550      0.01  Q  V      |          |          |          |
20+35       0.0551      0.01  Q  V      |          |          |          |
20+40       0.0551      0.01  Q  V      |          |          |          |
20+45       0.0552      0.01  Q  V      |          |          |          |
20+50       0.0552      0.01  Q  V      |          |          |          |
20+55       0.0553      0.01  Q  V      |          |          |          |
21+ 0       0.0553      0.01  Q  V      |          |          |          |
21+ 5       0.0554      0.01  Q  V      |          |          |          |
21+10       0.0554      0.01  Q  V      |          |          |          |
21+15       0.0555      0.01  Q  V      |          |          |          |
21+20       0.0555      0.01  Q  V      |          |          |          |
21+25       0.0556      0.01  Q  V      |          |          |          |
21+30       0.0556      0.01  Q  V      |          |          |          |
21+35       0.0557      0.01  Q  V      |          |          |          |
21+40       0.0557      0.01  Q  V      |          |          |          |
21+45       0.0558      0.01  Q  V      |          |          |          |
21+50       0.0558      0.01  Q  V      |          |          |          |
21+55       0.0559      0.01  Q  V      |          |          |          |
22+ 0       0.0559      0.01  Q  V      |          |          |          |
22+ 5       0.0560      0.01  Q  V      |          |          |          |
22+10       0.0560      0.01  Q  V      |          |          |          |
22+15       0.0561      0.01  Q  V      |          |          |          |
22+20       0.0561      0.01  Q  V      |          |          |          |
22+25       0.0562      0.01  Q  V      |          |          |          |
22+30       0.0562      0.01  Q  V      |          |          |          |
22+35       0.0562      0.01  Q  V      |          |          |          |
22+40       0.0563      0.01  Q  V      |          |          |          |
22+45       0.0563      0.01  Q  V      |          |          |          |
22+50       0.0564      0.01  Q  V      |          |          |          |
22+55       0.0564      0.01  Q  V      |          |          |          |
23+ 0       0.0564      0.01  Q  V      |          |          |          |
23+ 5       0.0565      0.01  Q  V      |          |          |          |
23+10       0.0565      0.01  Q  V      |          |          |          |
23+15       0.0566      0.01  Q  V      |          |          |          |
23+20       0.0566      0.01  Q  V      |          |          |          |
23+25       0.0566      0.01  Q  V      |          |          |          |
23+30       0.0567      0.01  Q  V      |          |          |          |
23+35       0.0567      0.01  Q  V      |          |          |          |
23+40       0.0568      0.01  Q  V      |          |          |          |
23+45       0.0568      0.01  Q  V      |          |          |          |
23+50       0.0568      0.01  Q  V      |          |          |          |
23+55       0.0569      0.01  Q  V      |          |          |          |
24+ 0       0.0569      0.01  Q  V      |          |          |          |
24+ 5       0.0570      0.00  Q  V      |          |          |          |
24+10       0.0570      0.01  Q  V      |          |          |          |
24+15       0.0571      0.01  Q  V      |          |          |          |
24+20       0.0571      0.01  Q  V      |          |          |          |
24+25       0.0572      0.01  Q  V      |          |          |          |
24+30       0.0573      0.01  Q  V      |          |          |          |
24+35       0.0573      0.01  Q  V      |          |          |          |
24+40       0.0574      0.01  Q  V      |          |          |          |
24+45       0.0575      0.01  Q  V      |          |          |          |
24+50       0.0576      0.01  Q  V      |          |          |          |
24+55       0.0577      0.01  Q  V      |          |          |          |
25+ 0       0.0578      0.01  Q  V      |          |          |          |
25+ 5       0.0579      0.01  Q  V      |          |          |          |
25+10       0.0579      0.01  Q  V      |          |          |          |
25+15       0.0580      0.01  Q  V      |          |          |          |
25+20       0.0581      0.01  Q  V      |          |          |          |
25+25       0.0582      0.01  Q  V      |          |          |          |
25+30       0.0582      0.01  Q  V      |          |          |          |
25+35       0.0583      0.01  Q  V      |          |          |          |
25+40       0.0584      0.01  Q  V      |          |          |          |
25+45       0.0585      0.01  Q  V      |          |          |          |
25+50       0.0586      0.01  Q  V      |          |          |          |
25+55       0.0587      0.01  Q  V      |          |          |          |
26+ 0       0.0588      0.01  Q  V      |          |          |          |
26+ 5       0.0589      0.01  Q   V     |          |          |          |
26+10       0.0590      0.01  Q   V     |          |          |          |
26+15       0.0591      0.01  Q   V     |          |          |          |
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26+20	0.0592	0.01	Q	V	|	|	|	|
26+25	0.0593	0.01	Q	V	|	|	|	|
26+30	0.0594	0.01	Q	V	|	|	|	|
26+35	0.0595	0.02	Q	V	|	|	|	|
26+40	0.0596	0.02	Q	V	|	|	|	|
26+45	0.0597	0.02	Q	V	|	|	|	|
26+50	0.0599	0.02	Q	V	|	|	|	|
26+55	0.0600	0.02	Q	V	|	|	|	|
27+ 0	0.0601	0.02	Q	V	|	|	|	|
27+ 5	0.0602	0.02	Q	V	|	|	|	|
27+10	0.0604	0.02	Q	V	|	|	|	|
27+15	0.0605	0.02	Q	V	|	|	|	|
27+20	0.0606	0.02	Q	V	|	|	|	|
27+25	0.0607	0.02	Q	V	|	|	|	|
27+30	0.0609	0.02	Q	V	|	|	|	|
27+35	0.0610	0.02	Q	V	|	|	|	|
27+40	0.0611	0.02	Q	V	|	|	|	|
27+45	0.0612	0.02	Q	V	|	|	|	|
27+50	0.0614	0.02	Q	V	|	|	|	|
27+55	0.0615	0.02	Q	V	|	|	|	|
28+ 0	0.0617	0.02	Q	V	|	|	|	|
28+ 5	0.0618	0.02	Q	V	|	|	|	|
28+10	0.0620	0.02	Q	V	|	|	|	|
28+15	0.0621	0.02	Q	V	|	|	|	|
28+20	0.0623	0.02	Q	V	|	|	|	|
28+25	0.0625	0.03	Q	V	|	|	|	|
28+30	0.0627	0.03	Q	V	|	|	|	|
28+35	0.0628	0.03	Q	V	|	|	|	|
28+40	0.0630	0.03	Q	V	|	|	|	|
28+45	0.0632	0.03	Q	V	|	|	|	|
28+50	0.0634	0.03	Q	V	|	|	|	|
28+55	0.0636	0.03	Q	V	|	|	|	|
29+ 0	0.0638	0.03	Q	V	|	|	|	|
29+ 5	0.0639	0.02	Q	V	|	|	|	|
29+10	0.0641	0.02	Q	V	|	|	|	|
29+15	0.0643	0.02	Q	V	|	|	|	|
29+20	0.0644	0.02	Q	V	|	|	|	|
29+25	0.0646	0.03	Q	V	|	|	|	|
29+30	0.0648	0.03	Q	V	|	|	|	|
29+35	0.0650	0.03	Q	V	|	|	|	|
29+40	0.0652	0.03	Q	V	|	|	|	|
29+45	0.0654	0.03	Q	V	|	|	|	|
29+50	0.0656	0.03	Q	V	|	|	|	|
29+55	0.0658	0.03	Q	V	|	|	|	|
30+ 0	0.0660	0.03	Q	V	|	|	|	|
30+ 5	0.0662	0.03	Q	V	|	|	|	|
30+10	0.0664	0.03	Q	V	|	|	|	|
30+15	0.0666	0.03	Q	V	|	|	|	|
30+20	0.0669	0.03	Q	V	|	|	|	|
30+25	0.0671	0.03	Q	V	|	|	|	|
30+30	0.0673	0.03	Q	V	|	|	|	|
30+35	0.0676	0.04	Q	V	|	|	|	|
30+40	0.0678	0.04	Q	V	|	|	|	|
30+45	0.0681	0.04	Q	V	|	|	|	|
30+50	0.0683	0.04	Q	V	|	|	|	|
30+55	0.0686	0.04	Q	V	|	|	|	|
31+ 0	0.0688	0.04	Q	V	|	|	|	|
31+ 5	0.0691	0.04	Q	V	|	|	|	|
31+10	0.0693	0.04	Q	V	|	|	|	|
31+15	0.0696	0.04	Q	V	|	|	|	|
31+20	0.0698	0.04	Q	V	|	|	|	|
31+25	0.0701	0.04	Q	V	|	|	|	|
31+30	0.0704	0.04	Q	V	|	|	|	|
31+35	0.0707	0.04	Q	V	|	|	|	|
31+40	0.0710	0.04	Q	V	|	|	|	|
31+45	0.0713	0.04	Q	V	|	|	|	|
31+50	0.0716	0.05	Q	V	|	|	|	|
31+55	0.0719	0.05	Q	V	|	|	|	|
32+ 0	0.0723	0.05	Q	V	|	|	|	|
32+ 5	0.0726	0.05	Q	V	|	|	|	|
32+10	0.0730	0.05	Q	V	|	|	|	|

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32+15       0.0734      0.05  Q   V     |          |          |          |
32+20       0.0737      0.05  Q    V    |          |          |          |
32+25       0.0741      0.05  Q    V    |          |          |          |
32+30       0.0745      0.05  Q    V    |          |          |          |
32+35       0.0749      0.06  Q    V    |          |          |          |
32+40       0.0753      0.06  Q    V    |          |          |          |
32+45       0.0757      0.06  Q    V    |          |          |          |
32+50       0.0761      0.06  Q    V    |          |          |          |
32+55       0.0765      0.06  Q    V    |          |          |          |
33+ 0       0.0770      0.06  Q    V    |          |          |          |
33+ 5       0.0774      0.07  Q    V    |          |          |          |
33+10       0.0779      0.07  Q    V    |          |          |          |
33+15       0.0784      0.07  Q    V    |          |          |          |
33+20       0.0789      0.07  Q    V    |          |          |          |
33+25       0.0794      0.07  Q    V    |          |          |          |
33+30       0.0799      0.07  Q    V    |          |          |          |
33+35       0.0804      0.08  Q    V    |          |          |          |
33+40       0.0809      0.08  Q    V    |          |          |          |
33+45       0.0814      0.08  Q    V    |          |          |          |
33+50       0.0820      0.08  Q    V    |          |          |          |
33+55       0.0825      0.08  Q    V    |          |          |          |
34+ 0       0.0831      0.08  Q    V    |          |          |          |
34+ 5       0.0835      0.07  Q    V    |          |          |          |
34+10       0.0839      0.06  Q    V    |          |          |          |
34+15       0.0843      0.05  Q    V    |          |          |          |
34+20       0.0847      0.05  Q    V    |          |          |          |
34+25       0.0851      0.05  Q    V    |          |          |          |
34+30       0.0854      0.05  Q    V    |          |          |          |
34+35       0.0859      0.07  Q    V    |          |          |          |
34+40       0.0864      0.07  Q    V    |          |          |          |
34+45       0.0869      0.07  Q    V    |          |          |          |
34+50       0.0874      0.07  Q    V    |          |          |          |
34+55       0.0879      0.07  Q    V    |          |          |          |
35+ 0       0.0884      0.07  Q     V   |          |          |          |
35+ 5       0.0889      0.07  Q     V   |          |          |          |
35+10       0.0894      0.07  Q     V   |          |          |          |
35+15       0.0898      0.07  Q     V   |          |          |          |
35+20       0.0903      0.07  Q     V   |          |          |          |
35+25       0.0908      0.07  Q     V   |          |          |          |
35+30       0.0913      0.07  Q     V   |          |          |          |
35+35       0.0917      0.07  Q     V   |          |          |          |
35+40       0.0922      0.06  Q     V   |          |          |          |
35+45       0.0926      0.06  Q     V   |          |          |          |
35+50       0.0930      0.06  Q     V   |          |          |          |
35+55       0.0935      0.07  Q     V   |          |          |          |
36+ 0       0.0939      0.07  Q     V   |          |          |          |
36+ 5       0.0945      0.08  Q     V   |          |          |          |
36+10       0.0951      0.09  Q     V   |          |          |          |
36+15       0.0957      0.09  Q     V   |          |          |          |
36+20       0.0964      0.09  Q     V   |          |          |          |
36+25       0.0970      0.09  Q     V   |          |          |          |
36+30       0.0977      0.09  Q     V   |          |          |          |
36+35       0.0980      0.04  Q     V   |          |          |          |
36+40       0.0980      0.01  Q     V   |          |          |          |
36+45       0.0980      0.00  Q     V   |          |          |          |
36+50       0.0981      0.01  Q     V   |          |          |          |
36+55       0.0981      0.01  Q     V   |          |          |          |
37+ 0       0.0982      0.01  Q     V   |          |          |          |
37+ 5       0.0983      0.02  Q     V   |          |          |          |
37+10       0.0986      0.03  Q     V   |          |          |          |
37+15       0.0988      0.04  Q     V   |          |          |          |
37+20       0.0991      0.04  Q     V   |          |          |          |
37+25       0.0994      0.04  Q     V   |          |          |          |
37+30       0.0996      0.04  Q     V   |          |          |          |
37+35       0.1001      0.07  Q     V   |          |          |          |
37+40       0.1006      0.08  Q     V   |          |          |          |
37+45       0.1012      0.08  Q     V   |          |          |          |
37+50       0.1018      0.08  Q     V   |          |          |          |
37+55       0.1024      0.08  Q     V   |          |          |          |
38+ 0       0.1029      0.08  Q      V  |          |          |          |
38+ 5       0.1032      0.04  Q      V  |          |          |          |
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38+10	0.1033	0.01	Q	V	|	|	|
38+15	0.1034	0.01	Q	V	|	|	|
38+20	0.1034	0.01	Q	V	|	|	|
38+25	0.1034	0.01	Q	V	|	|	|
38+30	0.1035	0.01	Q	V	|	|	|
38+35	0.1035	0.01	Q	V	|	|	|
38+40	0.1036	0.01	Q	V	|	|	|
38+45	0.1036	0.01	Q	V	|	|	|
38+50	0.1037	0.01	Q	V	|	|	|
38+55	0.1037	0.00	Q	V	|	|	|
39+ 0	0.1037	0.00	Q	V	|	|	|
39+ 5	0.1038	0.00	Q	V	|	|	|
39+10	0.1038	0.00	Q	V	|	|	|
39+15	0.1038	0.00	Q	V	|	|	|
39+20	0.1041	0.05	Q	V	|	|	|
39+25	0.1047	0.08	Q	V	|	|	|
39+30	0.1053	0.08	Q	V	|	|	|
39+35	0.1058	0.08	Q	V	|	|	|
39+40	0.1063	0.07	Q	V	|	|	|
39+45	0.1067	0.07	Q	V	|	|	|
39+50	0.1072	0.07	Q	V	|	|	|
39+55	0.1077	0.07	Q	V	|	|	|
40+ 0	0.1082	0.07	Q	V	|	|	|
40+ 5	0.1084	0.04	Q	V	|	|	|
40+10	0.1085	0.02	Q	V	|	|	|
40+15	0.1086	0.01	Q	V	|	|	|
40+20	0.1087	0.01	Q	V	|	|	|
40+25	0.1088	0.01	Q	V	|	|	|
40+30	0.1089	0.01	Q	V	|	|	|
40+35	0.1090	0.01	Q	V	|	|	|
40+40	0.1091	0.01	Q	V	|	|	|
40+45	0.1092	0.01	Q	V	|	|	|
40+50	0.1093	0.01	Q	V	|	|	|
40+55	0.1093	0.01	Q	V	|	|	|
41+ 0	0.1094	0.01	Q	V	|	|	|
41+ 5	0.1095	0.02	Q	V	|	|	|
41+10	0.1096	0.02	Q	V	|	|	|
41+15	0.1098	0.02	Q	V	|	|	|
41+20	0.1099	0.02	Q	V	|	|	|
41+25	0.1100	0.02	Q	V	|	|	|
41+30	0.1101	0.02	Q	V	|	|	|
41+35	0.1103	0.02	Q	V	|	|	|
41+40	0.1104	0.02	Q	V	|	|	|
41+45	0.1105	0.02	Q	V	|	|	|
41+50	0.1106	0.02	Q	V	|	|	|
41+55	0.1107	0.01	Q	V	|	|	|
42+ 0	0.1108	0.01	Q	V	|	|	|
42+ 5	0.1109	0.01	Q	V	|	|	|
42+10	0.1110	0.01	Q	V	|	|	|
42+15	0.1111	0.01	Q	V	|	|	|
42+20	0.1112	0.01	Q	V	|	|	|
42+25	0.1113	0.01	Q	V	|	|	|
42+30	0.1114	0.01	Q	V	|	|	|
42+35	0.1115	0.01	Q	V	|	|	|
42+40	0.1116	0.01	Q	V	|	|	|
42+45	0.1117	0.01	Q	V	|	|	|
42+50	0.1117	0.01	Q	V	|	|	|
42+55	0.1118	0.01	Q	V	|	|	|
43+ 0	0.1118	0.01	Q	V	|	|	|
43+ 5	0.1119	0.01	Q	V	|	|	|
43+10	0.1120	0.01	Q	V	|	|	|
43+15	0.1121	0.01	Q	V	|	|	|
43+20	0.1121	0.01	Q	V	|	|	|
43+25	0.1122	0.01	Q	V	|	|	|
43+30	0.1123	0.01	Q	V	|	|	|
43+35	0.1124	0.01	Q	V	|	|	|
43+40	0.1125	0.01	Q	V	|	|	|
43+45	0.1126	0.01	Q	V	|	|	|
43+50	0.1126	0.01	Q	V	|	|	|
43+55	0.1127	0.01	Q	V	|	|	|
44+ 0	0.1127	0.01	Q	V	|	|	|

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44+ 5       0.1128      0.01  Q      V  |          |          |          |
44+10       0.1129      0.01  Q      V  |          |          |          |
44+15       0.1130      0.01  Q      V  |          |          |          |
44+20       0.1130      0.01  Q      V  |          |          |          |
44+25       0.1131      0.01  Q      V  |          |          |          |
44+30       0.1132      0.01  Q      V  |          |          |          |
44+35       0.1133      0.01  Q      V  |          |          |          |
44+40       0.1133      0.01  Q      V  |          |          |          |
44+45       0.1134      0.01  Q      V  |          |          |          |
44+50       0.1135      0.01  Q      V  |          |          |          |
44+55       0.1135      0.01  Q      V  |          |          |          |
45+ 0       0.1136      0.01  Q      V  |          |          |          |
45+ 5       0.1136      0.01  Q      V  |          |          |          |
45+10       0.1137      0.01  Q      V  |          |          |          |
45+15       0.1138      0.01  Q      V  |          |          |          |
45+20       0.1138      0.01  Q      V  |          |          |          |
45+25       0.1139      0.01  Q      V  |          |          |          |
45+30       0.1140      0.01  Q      V  |          |          |          |
45+35       0.1140      0.01  Q      V  |          |          |          |
45+40       0.1141      0.01  Q      V  |          |          |          |
45+45       0.1142      0.01  Q      V  |          |          |          |
45+50       0.1142      0.01  Q      V  |          |          |          |
45+55       0.1143      0.01  Q      V  |          |          |          |
46+ 0       0.1143      0.01  Q      V  |          |          |          |
46+ 5       0.1144      0.01  Q      V  |          |          |          |
46+10       0.1145      0.01  Q      V  |          |          |          |
46+15       0.1145      0.01  Q      V  |          |          |          |
46+20       0.1146      0.01  Q      V  |          |          |          |
46+25       0.1147      0.01  Q      V  |          |          |          |
46+30       0.1147      0.01  Q      V  |          |          |          |
46+35       0.1148      0.01  Q      V  |          |          |          |
46+40       0.1148      0.01  Q      V  |          |          |          |
46+45       0.1149      0.01  Q      V  |          |          |          |
46+50       0.1149      0.01  Q      V  |          |          |          |
46+55       0.1150      0.01  Q      V  |          |          |          |
47+ 0       0.1150      0.01  Q      V  |          |          |          |
47+ 5       0.1151      0.01  Q      V  |          |          |          |
47+10       0.1151      0.01  Q      V  |          |          |          |
47+15       0.1152      0.01  Q      V  |          |          |          |
47+20       0.1152      0.01  Q      V  |          |          |          |
47+25       0.1153      0.01  Q      V  |          |          |          |
47+30       0.1153      0.01  Q      V  |          |          |          |
47+35       0.1154      0.01  Q      V  |          |          |          |
47+40       0.1154      0.01  Q      V  |          |          |          |
47+45       0.1155      0.01  Q      V  |          |          |          |
47+50       0.1155      0.01  Q      V  |          |          |          |
47+55       0.1156      0.01  Q      V  |          |          |          |
48+ 0       0.1156      0.01  Q      V  |          |          |          |
48+ 5       0.1157      0.01  Q      V  |          |          |          |
48+10       0.1158      0.01  Q      V  |          |          |          |
48+15       0.1159      0.01  Q      V  |          |          |          |
48+20       0.1160      0.02  Q      V  |          |          |          |
48+25       0.1161      0.02  Q      V  |          |          |          |
48+30       0.1163      0.02  Q      V  |          |          |          |
48+35       0.1164      0.02  Q      V  |          |          |          |
48+40       0.1165      0.02  Q      V  |          |          |          |
48+45       0.1167      0.02  Q      V  |          |          |          |
48+50       0.1169      0.02  Q      V  |          |          |          |
48+55       0.1171      0.03  Q      V  |          |          |          |
49+ 0       0.1172      0.03  Q      V  |          |          |          |
49+ 5       0.1174      0.02  Q      V  |          |          |          |
49+10       0.1175      0.02  Q       V |          |          |          |
49+15       0.1177      0.02  Q       V |          |          |          |
49+20       0.1178      0.02  Q       V |          |          |          |
49+25       0.1180      0.02  Q       V |          |          |          |
49+30       0.1181      0.02  Q       V |          |          |          |
49+35       0.1183      0.02  Q       V |          |          |          |
49+40       0.1184      0.02  Q       V |          |          |          |
49+45       0.1186      0.02  Q       V |          |          |          |
49+50       0.1187      0.02  Q       V |          |          |          |
49+55       0.1189      0.03  Q       V |          |          |          |
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50+ 0       0.1191      0.03  Q       V |          |          |          |
50+ 5       0.1193      0.03  Q       V |          |          |          |
50+10       0.1195      0.03  Q       V |          |          |          |
50+15       0.1197      0.03  Q       V |          |          |          |
50+20       0.1199      0.03  Q       V |          |          |          |
50+25       0.1201      0.03  Q       V |          |          |          |
50+30       0.1202      0.03  Q       V |          |          |          |
50+35       0.1205      0.03  Q       V |          |          |          |
50+40       0.1207      0.03  Q       V |          |          |          |
50+45       0.1209      0.03  Q       V |          |          |          |
50+50       0.1212      0.03  Q       V |          |          |          |
50+55       0.1214      0.03  Q       V |          |          |          |
51+ 0       0.1217      0.03  Q       V |          |          |          |
51+ 5       0.1219      0.03  Q       V |          |          |          |
51+10       0.1221      0.03  Q       V |          |          |          |
51+15       0.1224      0.03  Q       V |          |          |          |
51+20       0.1226      0.03  Q       V |          |          |          |
51+25       0.1228      0.03  Q       V |          |          |          |
51+30       0.1231      0.03  Q       V |          |          |          |
51+35       0.1233      0.03  Q       V |          |          |          |
51+40       0.1236      0.03  Q       V |          |          |          |
51+45       0.1238      0.03  Q       V |          |          |          |
51+50       0.1241      0.04  Q       V |          |          |          |
51+55       0.1244      0.04  Q       V |          |          |          |
52+ 0       0.1246      0.04  Q       V |          |          |          |
52+ 5       0.1249      0.04  Q       V |          |          |          |
52+10       0.1252      0.04  Q       V |          |          |          |
52+15       0.1255      0.04  Q       V |          |          |          |
52+20       0.1258      0.05  Q       V |          |          |          |
52+25       0.1261      0.05  Q       V |          |          |          |
52+30       0.1265      0.05  Q       V |          |          |          |
52+35       0.1268      0.05  Q       V |          |          |          |
52+40       0.1271      0.05  Q       V |          |          |          |
52+45       0.1275      0.05  Q       V |          |          |          |
52+50       0.1278      0.05  Q       V |          |          |          |
52+55       0.1282      0.06  Q       V |          |          |          |
53+ 0       0.1286      0.06  Q       V |          |          |          |
53+ 5       0.1289      0.05  Q       V |          |          |          |
53+10       0.1292      0.04  Q       V |          |          |          |
53+15       0.1295      0.04  Q       V |          |          |          |
53+20       0.1298      0.05  Q       V |          |          |          |
53+25       0.1301      0.05  Q       V |          |          |          |
53+30       0.1305      0.05  Q       V |          |          |          |
53+35       0.1308      0.05  Q       V |          |          |          |
53+40       0.1312      0.06  Q       V |          |          |          |
53+45       0.1316      0.06  Q       V |          |          |          |
53+50       0.1320      0.06  Q       V |          |          |          |
53+55       0.1324      0.06  Q        V|          |          |          |
54+ 0       0.1327      0.06  Q        V|          |          |          |
54+ 5       0.1332      0.06  Q        V|          |          |          |
54+10       0.1336      0.06  Q        V|          |          |          |
54+15       0.1340      0.06  Q        V|          |          |          |
54+20       0.1344      0.06  Q        V|          |          |          |
54+25       0.1349      0.06  Q        V|          |          |          |
54+30       0.1353      0.06  Q        V|          |          |          |
54+35       0.1358      0.07  Q        V|          |          |          |
54+40       0.1362      0.07  Q        V|          |          |          |
54+45       0.1367      0.07  Q        V|          |          |          |
54+50       0.1372      0.07  Q        V|          |          |          |
54+55       0.1377      0.07  Q        V|          |          |          |
55+ 0       0.1381      0.07  Q        V|          |          |          |
55+ 5       0.1386      0.07  Q        V|          |          |          |
55+10       0.1391      0.07  Q        V|          |          |          |
55+15       0.1396      0.07  Q        V|          |          |          |
55+20       0.1401      0.07  Q        V|          |          |          |
55+25       0.1406      0.08  Q        V|          |          |          |
55+30       0.1411      0.08  Q        V|          |          |          |
55+35       0.1417      0.08  Q        V|          |          |          |
55+40       0.1422      0.08  Q        V|          |          |          |
55+45       0.1428      0.08  Q        V|          |          |          |
55+50       0.1434      0.09  Q        V|          |          |          |
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55+55       0.1440      0.09  Q        V|         |         |         |
56+ 0       0.1447      0.09  Q        V|         |         |         |
56+ 5       0.1453      0.10  Q        V|         |         |         |
56+10       0.1460      0.10  Q        V|         |         |         |
56+15       0.1468      0.10  Q        V|         |         |         |
56+20       0.1475      0.10  Q         V         |         |         |
56+25       0.1482      0.10  Q         V         |         |         |
56+30       0.1489      0.10  Q         V         |         |         |
56+35       0.1496      0.11  Q         V         |         |         |
56+40       0.1504      0.11  Q         V         |         |         |
56+45       0.1512      0.11  Q         V         |         |         |
56+50       0.1520      0.11  Q         V         |         |         |
56+55       0.1528      0.12  Q         V         |         |         |
57+ 0       0.1536      0.12  Q         V         |         |         |
57+ 5       0.1539      0.05  Q         V         |         |         |
57+10       0.1540      0.01  Q         V         |         |         |
57+15       0.1541      0.01  Q         V         |         |         |
57+20       0.1542      0.02  Q         V         |         |         |
57+25       0.1544      0.02  Q         V         |         |         |
57+30       0.1545      0.02  Q         V         |         |         |
57+35       0.1547      0.03  Q         V         |         |         |
57+40       0.1550      0.03  Q         V         |         |         |
57+45       0.1552      0.03  Q         V         |         |         |
57+50       0.1555      0.04  Q         V         |         |         |
57+55       0.1558      0.05  Q         V         |         |         |
58+ 0       0.1561      0.05  Q         V         |         |         |
58+ 5       0.1567      0.08  Q         V         |         |         |
58+10       0.1574      0.10  Q         V         |         |         |
58+15       0.1581      0.10  Q         V         |         |         |
58+20       0.1588      0.10  Q         V         |         |         |
58+25       0.1595      0.10  Q         V         |         |         |
58+30       0.1602      0.10  Q         V         |         |         |
58+35       0.1606      0.06  Q         V         |         |         |
58+40       0.1609      0.04  Q         V         |         |         |
58+45       0.1611      0.03  Q         V         |         |         |
58+50       0.1614      0.03  Q         V         |         |         |
58+55       0.1616      0.04  Q         |V        |         |         |
59+ 0       0.1619      0.04  Q         |V        |         |         |
59+ 5       0.1621      0.03  Q         |V        |         |         |
59+10       0.1623      0.03  Q         |V        |         |         |
59+15       0.1625      0.03  Q         |V        |         |         |
59+20       0.1627      0.03  Q         |V        |         |         |
59+25       0.1629      0.03  Q         |V        |         |         |
59+30       0.1631      0.03  Q         |V        |         |         |
59+35       0.1633      0.02  Q         |V        |         |         |
59+40       0.1634      0.01  Q         |V        |         |         |
59+45       0.1635      0.01  Q         |V        |         |         |
59+50       0.1636      0.02  Q         |V        |         |         |
59+55       0.1638      0.03  Q         |V        |         |         |
60+ 0       0.1640      0.03  Q         |V        |         |         |
60+ 5       0.1644      0.07  Q         |V        |         |         |
60+10       0.1651      0.09  Q         |V        |         |         |
60+15       0.1657      0.10  Q         |V        |         |         |
60+20       0.1664      0.10  Q         |V        |         |         |
60+25       0.1672      0.11  Q         |V        |         |         |
60+30       0.1679      0.11  Q         |V        |         |         |
60+35       0.1687      0.12  Q         |V        |         |         |
60+40       0.1696      0.13  Q         |V        |         |         |
60+45       0.1705      0.13  Q         |V        |         |         |
60+50       0.1714      0.13  Q         |V        |         |         |
60+55       0.1724      0.14  Q         |V        |         |         |
61+ 0       0.1733      0.14  Q         |V        |         |         |
61+ 5       0.1745      0.17  Q         |V        |         |         |
61+10       0.1758      0.19  Q         |V        |         |         |
61+15       0.1771      0.19  Q         | V       |         |         |
61+20       0.1784      0.19  Q         | V       |         |         |
61+25       0.1797      0.19  Q         | V       |         |         |
61+30       0.1810      0.19  Q         | V       |         |         |
61+35       0.1819      0.13  Q         | V       |         |         |
61+40       0.1826      0.09  Q         | V       |         |         |
61+45       0.1832      0.09  Q         | V       |         |         |
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61+50       0.1838      0.09  Q          | V       |          |          |
61+55       0.1844      0.09  Q          | V       |          |          |
62+ 0       0.1850      0.09  Q          | V       |          |          |
62+ 5       0.1858      0.11  Q          | V       |          |          |
62+10       0.1867      0.13  Q          | V       |          |          |
62+15       0.1876      0.13  Q          | V       |          |          |
62+20       0.1885      0.13  Q          | V       |          |          |
62+25       0.1893      0.12  Q          | V       |          |          |
62+30       0.1902      0.12  Q          | V       |          |          |
62+35       0.1910      0.12  Q          |  V      |          |          |
62+40       0.1919      0.12  Q          |  V      |          |          |
62+45       0.1928      0.13  Q          |  V      |          |          |
62+50       0.1936      0.12  Q          |  V      |          |          |
62+55       0.1944      0.12  Q          |  V      |          |          |
63+ 0       0.1952      0.12  Q          |  V      |          |          |
63+ 5       0.1960      0.11  Q          |  V      |          |          |
63+10       0.1967      0.11  Q          |  V      |          |          |
63+15       0.1975      0.11  Q          |  V      |          |          |
63+20       0.1982      0.10  Q          |  V      |          |          |
63+25       0.1989      0.10  Q          |  V      |          |          |
63+30       0.1996      0.10  Q          |  V      |          |          |
63+35       0.2002      0.08  Q          |  V      |          |          |
63+40       0.2006      0.07  Q          |  V      |          |          |
63+45       0.2011      0.07  Q          |  V      |          |          |
63+50       0.2016      0.07  Q          |  V      |          |          |
63+55       0.2020      0.07  Q          |  V      |          |          |
64+ 0       0.2025      0.07  Q          |  V      |          |          |
64+ 5       0.2028      0.04  Q          |  V      |          |          |
64+10       0.2030      0.03  Q          |  V      |          |          |
64+15       0.2032      0.03  Q          |  V      |          |          |
64+20       0.2034      0.03  Q          |  V      |          |          |
64+25       0.2036      0.03  Q          |  V      |          |          |
64+30       0.2037      0.03  Q          |  V      |          |          |
64+35       0.2039      0.02  Q          |  V      |          |          |
64+40       0.2041      0.02  Q          |  V      |          |          |
64+45       0.2042      0.02  Q          |  V      |          |          |
64+50       0.2043      0.02  Q          |  V      |          |          |
64+55       0.2045      0.02  Q          |  V      |          |          |
65+ 0       0.2046      0.02  Q          |  V      |          |          |
65+ 5       0.2048      0.03  Q          |  V      |          |          |
65+10       0.2051      0.03  Q          |  V      |          |          |
65+15       0.2053      0.03  Q          |  V      |          |          |
65+20       0.2055      0.03  Q          |  V      |          |          |
65+25       0.2058      0.03  Q          |   V     |          |          |
65+30       0.2060      0.03  Q          |   V     |          |          |
65+35       0.2063      0.03  Q          |   V     |          |          |
65+40       0.2065      0.03  Q          |   V     |          |          |
65+45       0.2067      0.03  Q          |   V     |          |          |
65+50       0.2069      0.03  Q          |   V     |          |          |
65+55       0.2071      0.03  Q          |   V     |          |          |
66+ 0       0.2073      0.03  Q          |   V     |          |          |
66+ 5       0.2075      0.03  Q          |   V     |          |          |
66+10       0.2077      0.03  Q          |   V     |          |          |
66+15       0.2079      0.03  Q          |   V     |          |          |
66+20       0.2081      0.03  Q          |   V     |          |          |
66+25       0.2083      0.03  Q          |   V     |          |          |
66+30       0.2085      0.03  Q          |   V     |          |          |
66+35       0.2086      0.02  Q          |   V     |          |          |
66+40       0.2088      0.02  Q          |   V     |          |          |
66+45       0.2089      0.02  Q          |   V     |          |          |
66+50       0.2090      0.02  Q          |   V     |          |          |
66+55       0.2091      0.01  Q          |   V     |          |          |
67+ 0       0.2092      0.01  Q          |   V     |          |          |
67+ 5       0.2094      0.02  Q          |   V     |          |          |
67+10       0.2095      0.02  Q          |   V     |          |          |
67+15       0.2096      0.02  Q          |   V     |          |          |
67+20       0.2098      0.02  Q          |   V     |          |          |
67+25       0.2100      0.03  Q          |   V     |          |          |
67+30       0.2102      0.03  Q          |   V     |          |          |
67+35       0.2103      0.02  Q          |   V     |          |          |
67+40       0.2105      0.02  Q          |   V     |          |          |
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67+45       0.2106      0.02  Q          |   V     |          |          |
67+50       0.2108      0.02  Q          |   V     |          |          |
67+55       0.2108      0.01  Q          |   V     |          |          |
68+ 0       0.2109      0.01  Q          |   V     |          |          |
68+ 5       0.2111      0.02  Q          |   V     |          |          |
68+10       0.2112      0.02  Q          |   V     |          |          |
68+15       0.2114      0.02  Q          |   V     |          |          |
68+20       0.2115      0.02  Q          |   V     |          |          |
68+25       0.2116      0.02  Q          |   V     |          |          |
68+30       0.2118      0.02  Q          |   V     |          |          |
68+35       0.2119      0.02  Q          |   V     |          |          |
68+40       0.2121      0.02  Q          |   V     |          |          |
68+45       0.2122      0.02  Q          |   V     |          |          |
68+50       0.2123      0.02  Q          |   V     |          |          |
68+55       0.2124      0.01  Q          |   V     |          |          |
69+ 0       0.2125      0.01  Q          |   V     |          |          |
69+ 5       0.2126      0.02  Q          |   V     |          |          |
69+10       0.2128      0.02  Q          |   V     |          |          |
69+15       0.2129      0.02  Q          |   V     |          |          |
69+20       0.2130      0.02  Q          |   V     |          |          |
69+25       0.2131      0.01  Q          |   V     |          |          |
69+30       0.2132      0.01  Q          |   V     |          |          |
69+35       0.2134      0.02  Q          |   V     |          |          |
69+40       0.2135      0.02  Q          |   V     |          |          |
69+45       0.2136      0.02  Q          |   V     |          |          |
69+50       0.2138      0.02  Q          |   V     |          |          |
69+55       0.2139      0.01  Q          |   V     |          |          |
70+ 0       0.2139      0.01  Q          |   V     |          |          |
70+ 5       0.2141      0.02  Q          |   V     |          |          |
70+10       0.2142      0.02  Q          |   V     |          |          |
70+15       0.2144      0.02  Q          |   V     |          |          |
70+20       0.2145      0.02  Q          |   V     |          |          |
70+25       0.2146      0.01  Q          |   V     |          |          |
70+30       0.2147      0.01  Q          |   V     |          |          |
70+35       0.2148      0.01  Q          |   V     |          |          |
70+40       0.2149      0.01  Q          |   V     |          |          |
70+45       0.2149      0.01  Q          |   V     |          |          |
70+50       0.2150      0.01  Q          |   V     |          |          |
70+55       0.2151      0.01  Q          |   V     |          |          |
71+ 0       0.2152      0.01  Q          |   V     |          |          |
71+ 5       0.2153      0.01  Q          |   V     |          |          |
71+10       0.2154      0.01  Q          |   V     |          |          |
71+15       0.2155      0.01  Q          |   V     |          |          |
71+20       0.2156      0.01  Q          |   V     |          |          |
71+25       0.2157      0.01  Q          |   V     |          |          |
71+30       0.2158      0.01  Q          |   V     |          |          |
71+35       0.2159      0.01  Q          |   V     |          |          |
71+40       0.2160      0.01  Q          |   V     |          |          |
71+45       0.2161      0.01  Q          |   V     |          |          |
71+50       0.2162      0.01  Q          |   V     |          |          |
71+55       0.2163      0.01  Q          |   V     |          |          |
72+ 0       0.2164      0.01  Q          |   V     |          |          |
72+ 5       0.2165      0.02  Q          |   V     |          |          |
72+10       0.2168      0.04  Q          |   V     |          |          |
72+15       0.2171      0.04  Q          |   V     |          |          |
72+20       0.2174      0.05  Q          |   V     |          |          |
72+25       0.2178      0.06  Q          |   V     |          |          |
72+30       0.2182      0.06  Q          |   V     |          |          |
72+35       0.2186      0.06  Q          |   V     |          |          |
72+40       0.2190      0.06  Q          |   V     |          |          |
72+45       0.2194      0.06  Q          |   V     |          |          |
72+50       0.2199      0.07  Q          |   V     |          |          |
72+55       0.2204      0.08  Q          |    V    |          |          |
73+ 0       0.2209      0.08  Q          |    V    |          |          |
73+ 5       0.2214      0.07  Q          |    V    |          |          |
73+10       0.2218      0.06  Q          |    V    |          |          |
73+15       0.2222      0.06  Q          |    V    |          |          |
73+20       0.2226      0.06  Q          |    V    |          |          |
73+25       0.2230      0.06  Q          |    V    |          |          |
73+30       0.2234      0.06  Q          |    V    |          |          |
73+35       0.2237      0.06  Q          |    V    |          |          |
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73+40       0.2241      0.06  Q          |    V    |          |          |
73+45       0.2245      0.06  Q          |    V    |          |          |
73+50       0.2250      0.07  Q          |    V    |          |          |
73+55       0.2255      0.08  Q          |    V    |          |          |
74+ 0       0.2261      0.08  Q          |    V    |          |          |
74+ 5       0.2266      0.08  Q          |    V    |          |          |
74+10       0.2271      0.08  Q          |    V    |          |          |
74+15       0.2277      0.08  Q          |    V    |          |          |
74+20       0.2282      0.08  Q          |    V    |          |          |
74+25       0.2287      0.08  Q          |    V    |          |          |
74+30       0.2293      0.08  Q          |    V    |          |          |
74+35       0.2299      0.09  Q          |    V    |          |          |
74+40       0.2305      0.10  Q          |    V    |          |          |
74+45       0.2312      0.10  Q          |    V    |          |          |
74+50       0.2318      0.10  Q          |    V    |          |          |
74+55       0.2325      0.10  Q          |    V    |          |          |
75+ 0       0.2332      0.10  Q          |    V    |          |          |
75+ 5       0.2338      0.10  Q          |    V    |          |          |
75+10       0.2345      0.10  Q          |    V    |          |          |
75+15       0.2352      0.10  Q          |     V   |          |          |
75+20       0.2358      0.10  Q          |     V   |          |          |
75+25       0.2365      0.10  Q          |     V   |          |          |
75+30       0.2371      0.10  Q          |     V   |          |          |
75+35       0.2378      0.10  Q          |     V   |          |          |
75+40       0.2385      0.10  Q          |     V   |          |          |
75+45       0.2391      0.10  Q          |     V   |          |          |
75+50       0.2399      0.11  Q          |     V   |          |          |
75+55       0.2407      0.11  Q          |     V   |          |          |
76+ 0       0.2415      0.12  Q          |     V   |          |          |
76+ 5       0.2422      0.12  Q          |     V   |          |          |
76+10       0.2430      0.12  Q          |     V   |          |          |
76+15       0.2438      0.12  Q          |     V   |          |          |
76+20       0.2447      0.13  Q          |     V   |          |          |
76+25       0.2456      0.13  Q          |     V   |          |          |
76+30       0.2466      0.13  Q          |     V   |          |          |
76+35       0.2475      0.13  Q          |     V   |          |          |
76+40       0.2484      0.13  Q          |     V   |          |          |
76+45       0.2493      0.13  Q          |     V   |          |          |
76+50       0.2503      0.15  Q          |      V  |          |          |
76+55       0.2514      0.15  Q          |      V  |          |          |
77+ 0       0.2525      0.15  Q          |      V  |          |          |
77+ 5       0.2534      0.13  Q          |      V  |          |          |
77+10       0.2542      0.12  Q          |      V  |          |          |
77+15       0.2550      0.12  Q          |      V  |          |          |
77+20       0.2558      0.13  Q          |      V  |          |          |
77+25       0.2568      0.13  Q          |      V  |          |          |
77+30       0.2577      0.13  Q          |      V  |          |          |
77+35       0.2581      0.06  Q          |      V  |          |          |
77+40       0.2581      0.01  Q          |      V  |          |          |
77+45       0.2582      0.00  Q          |      V  |          |          |
77+50       0.2582      0.01  Q          |      V  |          |          |
77+55       0.2583      0.01  Q          |      V  |          |          |
78+ 0       0.2583      0.01  Q          |      V  |          |          |
78+ 5       0.2585      0.02  Q          |      V  |          |          |
78+10       0.2587      0.03  Q          |      V  |          |          |
78+15       0.2590      0.04  Q          |      V  |          |          |
78+20       0.2592      0.04  Q          |      V  |          |          |
78+25       0.2595      0.04  Q          |      V  |          |          |
78+30       0.2598      0.04  Q          |      V  |          |          |
78+35       0.2601      0.06  Q          |      V  |          |          |
78+40       0.2606      0.07  Q          |      V  |          |          |
78+45       0.2611      0.07  Q          |      V  |          |          |
78+50       0.2616      0.07  Q          |      V  |          |          |
78+55       0.2620      0.07  Q          |      V  |          |          |
79+ 0       0.2625      0.07  Q          |      V  |          |          |
79+ 5       0.2630      0.07  Q          |      V  |          |          |
79+10       0.2635      0.07  Q          |      V  |          |          |
79+15       0.2640      0.07  Q          |      V  |          |          |
79+20       0.2647      0.09  Q          |       V |          |          |
79+25       0.2654      0.10  Q          |       V |          |          |
79+30       0.2661      0.10  Q          |       V |          |          |
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79+35       0.2669      0.12  Q          |        V |         |         |
79+40       0.2678      0.13  Q          |        V |         |         |
79+45       0.2687      0.13  Q          |        V |         |         |
79+50       0.2697      0.15  Q          |        V |         |         |
79+55       0.2708      0.16  Q          |        V |         |         |
80+ 0       0.2719      0.16  Q          |        V |         |         |
80+ 5       0.2733      0.19  Q          |        V |         |         |
80+10       0.2748      0.21  Q          |        V |         |         |
80+15       0.2762      0.22  Q          |        V |         |         |
80+20       0.2777      0.22  Q          |        V |         |         |
80+25       0.2793      0.22  Q          |         V|         |         |
80+30       0.2808      0.22  Q          |         V|         |         |
80+35       0.2824      0.24  Q          |         V|         |         |
80+40       0.2841      0.25  Q          |         V|         |         |
80+45       0.2858      0.25  Q          |         V|         |         |
80+50       0.2876      0.27  |Q         |         V|         |         |
80+55       0.2895      0.28  |Q         |         V|         |         |
81+ 0       0.2914      0.28  |Q         |         V|         |         |
81+ 5       0.2936      0.31  |Q         |         V|         |         |
81+10       0.2959      0.33  |Q         |          V         |         |
81+15       0.2982      0.33  |Q         |          V         |         |
81+20       0.3006      0.35  |Q         |          V         |         |
81+25       0.3030      0.36  |Q         |          V         |         |
81+30       0.3055      0.36  |Q         |          V         |         |
81+35       0.3082      0.38  |Q         |          V         |         |
81+40       0.3108      0.39  |Q         |          |V        |         |
81+45       0.3135      0.39  |Q         |          |V        |         |
81+50       0.3163      0.41  |Q         |          |V        |         |
81+55       0.3192      0.42  |Q         |          |V        |         |
82+ 0       0.3221      0.42  |Q         |          |V        |         |
82+ 5       0.3242      0.31  |Q         |          | V       |         |
82+10       0.3259      0.24  Q          |          | V       |         |
82+15       0.3276      0.24  Q          |          | V       |         |
82+20       0.3292      0.24  Q          |          | V       |         |
82+25       0.3308      0.24  Q          |          | V       |         |
82+30       0.3325      0.24  Q          |          | V       |         |
82+35       0.3347      0.32  |Q         |          | V       |         |
82+40       0.3372      0.37  |Q         |          | V       |         |
82+45       0.3398      0.37  |Q         |          |  V      |         |
82+50       0.3424      0.37  |Q         |          |  V      |         |
82+55       0.3450      0.38  |Q         |          |  V      |         |
83+ 0       0.3476      0.38  |Q         |          |  V      |         |
83+ 5       0.3500      0.36  |Q         |          |  V      |         |
83+10       0.3525      0.35  |Q         |          |  V      |         |
83+15       0.3549      0.35  |Q         |          |   V     |         |
83+20       0.3573      0.35  |Q         |          |   V     |         |
83+25       0.3598      0.35  |Q         |          |   V     |         |
83+30       0.3622      0.35  |Q         |          |   V     |         |
83+35       0.3644      0.32  |Q         |          |   V     |         |
83+40       0.3665      0.31  |Q         |          |   V     |         |
83+45       0.3686      0.30  |Q         |          |    V    |         |
83+50       0.3708      0.32  |Q         |          |    V    |         |
83+55       0.3731      0.33  |Q         |          |    V    |         |
84+ 0       0.3754      0.33  |Q         |          |    V    |         |
84+ 5       0.3785      0.44  |Q         |          |    V    |         |
84+10       0.3820      0.51  | Q        |          |    V    |         |
84+15       0.3856      0.52  | Q        |          |     V   |         |
84+20       0.3893      0.54  | Q        |          |     V   |         |
84+25       0.3930      0.55  | Q        |          |     V   |         |
84+30       0.3968      0.55  | Q        |          |      V  |         |
84+35       0.4008      0.58  | Q        |          |      V  |         |
84+40       0.4050      0.60  | Q        |          |      V  |         |
84+45       0.4091      0.60  | Q        |          |      V  |         |
84+50       0.4134      0.62  | Q        |          |       V |         |
84+55       0.4177      0.63  | Q        |          |       V |         |
85+ 0       0.4221      0.63  | Q        |          |       V |         |
85+ 5       0.4270      0.71  | Q        |          |        V|         |
85+10       0.4323      0.76  |  Q       |          |        V|         |
85+15       0.4375      0.77  |  Q       |          |        V|         |
85+20       0.4428      0.77  |  Q       |          |         V         |
85+25       0.4481      0.77  |  Q       |          |         V         |
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```
85+30       0.4534      0.77  |  Q       |          |          V          |
85+35       0.4575      0.60  | Q        |          |          |V         |
85+40       0.4609      0.49  |Q         |          |          |V         |
85+45       0.4642      0.48  |Q         |          |          |V         |
85+50       0.4675      0.48  |Q         |          |          |V         |
85+55       0.4709      0.48  |Q         |          |          | V        |
86+ 0       0.4742      0.48  |Q         |          |          | V        |
86+ 5       0.4779      0.55  | Q        |          |          | V        |
86+10       0.4820      0.58  | Q        |          |          | V        |
86+15       0.4860      0.59  | Q        |          |          |  V       |
86+20       0.4900      0.57  | Q        |          |          |  V       |
86+25       0.4939      0.57  | Q        |          |          |  V       |
86+30       0.4978      0.57  | Q        |          |          |  V       |
86+35       0.5017      0.57  | Q        |          |          |   V      |
86+40       0.5056      0.57  | Q        |          |          |   V      |
86+45       0.5095      0.57  | Q        |          |          |   V      |
86+50       0.5133      0.55  | Q        |          |          |   V      |
86+55       0.5170      0.54  | Q        |          |          |    V     |
87+ 0       0.5208      0.54  | Q        |          |          |    V     |
87+ 5       0.5244      0.53  | Q        |          |          |    V     |
87+10       0.5280      0.52  | Q        |          |          |    V     |
87+15       0.5315      0.52  | Q        |          |          |     V    |
87+20       0.5350      0.50  | Q        |          |          |     V    |
87+25       0.5384      0.49  |Q         |          |          |     V    |
87+30       0.5418      0.49  |Q         |          |          |     V    |
87+35       0.5448      0.43  |Q         |          |          |      V   |
87+40       0.5475      0.39  |Q         |          |          |      V   |
87+45       0.5501      0.39  |Q         |          |          |      V   |
87+50       0.5528      0.39  |Q         |          |          |      V   |
87+55       0.5555      0.39  |Q         |          |          |      V   |
88+ 0       0.5582      0.39  |Q         |          |          |      V   |
88+ 5       0.5596      0.20  Q          |          |          |       V  |
88+10       0.5602      0.09  Q          |          |          |       V  |
88+15       0.5608      0.08  Q          |          |          |       V  |
88+20       0.5613      0.08  Q          |          |          |       V  |
88+25       0.5618      0.08  Q          |          |          |       V  |
88+30       0.5623      0.08  Q          |          |          |       V  |
88+35       0.5628      0.07  Q          |          |          |       V  |
88+40       0.5632      0.06  Q          |          |          |       V  |
88+45       0.5636      0.06  Q          |          |          |       V  |
88+50       0.5640      0.06  Q          |          |          |       V  |
88+55       0.5644      0.06  Q          |          |          |       V  |
89+ 0       0.5648      0.06  Q          |          |          |       V  |
89+ 5       0.5651      0.04  Q          |          |          |       V  |
89+10       0.5652      0.03  Q          |          |          |       V  |
89+15       0.5654      0.03  Q          |          |          |       V  |
89+20       0.5656      0.03  Q          |          |          |       V  |
89+25       0.5658      0.03  Q          |          |          |       V  |
89+30       0.5660      0.03  Q          |          |          |       V  |
89+35       0.5662      0.03  Q          |          |          |       V  |
89+40       0.5664      0.03  Q          |          |          |       V  |
89+45       0.5666      0.03  Q          |          |          |       V  |
89+50       0.5667      0.01  Q          |          |          |       V  |
89+55       0.5668      0.01  Q          |          |          |       V  |
90+ 0       0.5668      0.01  Q          |          |          |       V  |
90+ 5       0.5668      0.01  Q          |          |          |       V  |
90+10       0.5669      0.01  Q          |          |          |       V  |
90+15       0.5669      0.01  Q          |          |          |       V  |
90+20       0.5670      0.01  Q          |          |          |       V  |
90+25       0.5670      0.01  Q          |          |          |       V  |
90+30       0.5671      0.01  Q          |          |          |       V  |
90+35       0.5674      0.04  Q          |          |          |       V  |
90+40       0.5677      0.06  Q          |          |          |       V  |
90+45       0.5681      0.06  Q          |          |          |       V  |
90+50       0.5685      0.05  Q          |          |          |       V  |
90+55       0.5687      0.04  Q          |          |          |       V  |
91+ 0       0.5690      0.04  Q          |          |          |       V  |
91+ 5       0.5693      0.05  Q          |          |          |       V  |
91+10       0.5697      0.06  Q          |          |          |       V  |
91+15       0.5701      0.06  Q          |          |          |       V  |
91+20       0.5703      0.03  Q          |          |          |       V  |
```

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  91+25       0.5704      0.02  Q          |          |          |        V |
  91+30       0.5705      0.01  Q          |          |          |        V |
  91+35       0.5708      0.04  Q          |          |          |        V |
  91+40       0.5712      0.06  Q          |          |          |        V |
  91+45       0.5716      0.06  Q          |          |          |        V |
  91+50       0.5719      0.05  Q          |          |          |        V |
  91+55       0.5722      0.04  Q          |          |          |        V |
  92+ 0       0.5724      0.04  Q          |          |          |        V |
  92+ 5       0.5728      0.05  Q          |          |          |        V |
  92+10       0.5732      0.06  Q          |          |          |         V|
  92+15       0.5736      0.06  Q          |          |          |         V|
  92+20       0.5740      0.06  Q          |          |          |         V|
  92+25       0.5744      0.06  Q          |          |          |         V|
  92+30       0.5748      0.06  Q          |          |          |         V|
  92+35       0.5752      0.06  Q          |          |          |         V|
  92+40       0.5756      0.06  Q          |          |          |         V|
  92+45       0.5760      0.06  Q          |          |          |         V|
  92+50       0.5763      0.05  Q          |          |          |         V|
  92+55       0.5765      0.04  Q          |          |          |         V|
  93+ 0       0.5768      0.04  Q          |          |          |         V|
  93+ 5       0.5772      0.05  Q          |          |          |         V|
  93+10       0.5775      0.06  Q          |          |          |         V|
  93+15       0.5779      0.06  Q          |          |          |         V|
  93+20       0.5783      0.05  Q          |          |          |         V|
  93+25       0.5785      0.04  Q          |          |          |         V|
  93+30       0.5788      0.04  Q          |          |          |         V|
  93+35       0.5791      0.05  Q          |          |          |         V|
  93+40       0.5795      0.06  Q          |          |          |         V|
  93+45       0.5799      0.06  Q          |          |          |         V|
  93+50       0.5803      0.05  Q          |          |          |         V|
  93+55       0.5805      0.04  Q          |          |          |         V|
  94+ 0       0.5808      0.04  Q          |          |          |         V|
  94+ 5       0.5811      0.05  Q          |          |          |         V|
  94+10       0.5815      0.06  Q          |          |          |         V|
  94+15       0.5819      0.06  Q          |          |          |         V|
  94+20       0.5822      0.05  Q          |          |          |         V|
  94+25       0.5825      0.04  Q          |          |          |         V|
  94+30       0.5828      0.04  Q          |          |          |         V|
  94+35       0.5830      0.04  Q          |          |          |         V|
  94+40       0.5833      0.04  Q          |          |          |         V|
  94+45       0.5836      0.04  Q          |          |          |         V|
  94+50       0.5838      0.04  Q          |          |          |         V|
  94+55       0.5841      0.04  Q          |          |          |         V|
  95+ 0       0.5844      0.04  Q          |          |          |         V|
  95+ 5       0.5846      0.04  Q          |          |          |         V|
  95+10       0.5849      0.04  Q          |          |          |         V|
  95+15       0.5852      0.04  Q          |          |          |         V|
  95+20       0.5854      0.04  Q          |          |          |         V|
  95+25       0.5857      0.04  Q          |          |          |         V|
  95+30       0.5860      0.04  Q          |          |          |         V|
  95+35       0.5862      0.04  Q          |          |          |         V|
  95+40       0.5865      0.04  Q          |          |          |         V|
  95+45       0.5867      0.04  Q          |          |          |         V|
  95+50       0.5870      0.04  Q          |          |          |         V|
  95+55       0.5873      0.04  Q          |          |          |         V|
  96+ 0       0.5875      0.04  Q          |          |          |         V|
  96+ 5       0.5876      0.02  Q          |          |          |         V|
  96+10       0.5877      0.00  Q          |          |          |         V|
----------------------------------------------------------------------
```

SECTION 4 – RATIONAL METHOD

100 Year, Existing Condition Rational Method Storm

100 Year, Developed Condition Rational Method Storm

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
        Rational Hydrology Study        Date: 05/04/20  File:beaumont.out
----------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
100 YEAR RATIONAL METHOD
EXISTING CONDITION

----------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

----------------------------------------------------------------------


Program License Serial Number 4022

----------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Beaumont ] area used.
10 year storm 10 minute intensity =  2.300(In/Hr)
10 year storm 60 minute intensity =  0.890(In/Hr)
100 year storm 10 minute intensity =  3.410(In/Hr)
100 year storm 60 minute intensity =  1.320(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.320(In/Hr)
Slope of intensity duration curve = 0.5300



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   314.000(Ft.)
Top (of initial area) elevation =  2603.000(Ft.)
Bottom (of initial area) elevation =  2600.150(Ft.)
Difference in elevation =     2.850(Ft.)
Slope =    0.00908  s(percent)=       0.91
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.258 min.
Rainfall intensity =      3.063(In/Hr) for a   100.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.716
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      2.216(CFS)
Total initial stream area =        1.010(Ac.)
Pervious area fraction = 0.800
End of computations, total study area =            1.01 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.800
Area averaged RI index number =  56.0
```

```
               Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
        Rational Hydrology Study        Date: 05/04/20  File:beaumontdev.out
----------------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
100 YEAR RATIONAL METHOD STORM
DEVELOPED CONDITION

----------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

----------------------------------------------------------------------------


Program License Serial Number 4022

----------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Beaumont ] area used.
10 year storm 10 minute intensity =  2.300(In/Hr)
10 year storm 60 minute intensity =  0.890(In/Hr)
100 year storm 10 minute intensity =  3.410(In/Hr)
100 year storm 60 minute intensity =  1.320(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.320(In/Hr)
Slope of intensity duration curve = 0.5300


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   525.000(Ft.)
Top (of initial area) elevation =  2602.940(Ft.)
Bottom (of initial area) elevation =  1197.500(Ft.)
Difference in elevation =  1405.440(Ft.)
Slope =    2.67703  s(percent)=     267.70
TC = k(0.336)*[(length^3)/(elevation change)]^0.2
Warning: TC computed to be less than 5 min.; program is assuming the
time of concentration is 5 minutes.
Initial area time of concentration =    5.000 min.
Rainfall intensity =      4.927(In/Hr) for a   100.0 year storm
MOBILE HOME PARK subarea type
Runoff Coefficient = 0.861
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.250; Impervious fraction =  0.750
Initial subarea runoff =      4.282(CFS)
Total initial stream area =        1.010(Ac.)
Pervious area fraction = 0.250
End of computations, total study area =            1.01 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.250
Area averaged RI index number =  56.0
```

SECTION 5 – HYDRAULICS

Area 1/Area 2/Area 3 (12” PVC)

Area 2 (8” PVC)

Area 3 (8” PVC)

```
T1 BEAUMONT BEYOND FOOD HYDRAULICS                                          0
T2 100 YEAR STORM
T3 AREAS A1/A2/A3
SO       .0002597.500  1                          2597.500
R     143.0002598.320  1      .013                                  .000    .000 0
JX    145.0002598.330  3  2   .013    1.200         2598.400         90.0
.000
R     223.0002598.770  3      .013                                  .000    .000 0
JX    225.0002598.780  5  4   .013     .900         2598.850         90.0
.000
R     264.0002599.000  5      .013                                  .000    .000 0
SH    264.0002599.000  5                          2599.000
CD   1  4   1    .000   1.000     .000  .000  .000   .00
CD   2  4   1    .000    .670     .000  .000  .000   .00
CD   3  4   1    .000   1.000     .000  .000  .000   .00
CD   4  4   1    .000    .670     .000  .000  .000   .00
CD   5  4   1    .000   1.000     .000  .000  .000   .00
Q             1.300   .0
```

Program Package Serial Number: 1715

WATER SURFACE PROFILE LISTING Date: 5- 5-2020 Time: 4:10: 3

BEAUMONT BEYOND FOOD HYDRAULICS
100 YEAR STORM
AREAS A1/A2/A3

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
.000	2597.500	.789	2598.289	3.40	5.12	.41	2598.70	.00	.79	.82	1.000	.000	.00	1 .0
1.163	.0057					.0094	.01	.79	1.00	1.00	.013	.00	.00	PIPE
1.163	2597.507	.830	2598.336	3.40	4.88	.37	2598.71	.00	.79	.75	1.000	.000	.00	1 .0
5.190	.0057					.0086	.04	.83	.89	1.00	.013	.00	.00	PIPE
6.353	2597.536	.878	2598.414	3.40	4.65	.34	2598.75	.00	.79	.65	1.000	.000	.00	1 .0
13.794	.0057					.0080	.11	.88	.78	1.00	.013	.00	.00	PIPE
20.147	2597.615	.940	2598.556	3.40	4.44	.31	2598.86	.00	.79	.47	1.000	.000	.00	1 .0
18.968	.0057					.0081	.15	.94	.61	1.00	.013	.00	.00	PIPE
39.115	2597.724	1.000	2598.724	3.40	4.33	.29	2599.02	.00	.79	.00	1.000	.000	.00	1 .0
103.885	.0057					.0087	.91	1.00	.00	1.00	.013	.00	.00	PIPE
143.000	2598.320	1.350	2599.670	3.40	4.33	.29	2599.96	.00	.79	.00	1.000	.000	.00	1 .0
JUNCT STR	.0050					.0065	.01	1.35	.00		.013	.00	.00	PIPE
145.000	2598.330	1.692	2600.022	2.20	2.80	.12	2600.14	.00	.63	.00	1.000	.000	.00	1 .0
78.000	.0056					.0038	.30	1.69	.00	.69	.013	.00	.00	PIPE
223.000	2598.770	1.549	2600.319	2.20	2.80	.12	2600.44	.00	.63	.00	1.000	.000	.00	1 .0
JUNCT STR	.0050					.0026	.01	1.55	.00		.013	.00	.00	PIPE
225.000	2598.780	1.703	2600.483	1.30	1.66	.04	2600.53	.00	.48	.00	1.000	.000	.00	1 .0
39.000	.0056					.0013	.05	1.70	.00	.49	.013	.00	.00	PIPE

Program Package Serial Number: 1715

WATER SURFACE PROFILE LISTING Date: 5- 5-2020 Time: 4:10: 3

BEAUMONT BEYOND FOOD HYDRAULICS
100 YEAR STORM
AREAS A1/A2/A3

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
264.000	2599.000	1.535	2600.535	1.30	1.66	.04	2600.58	.00	.48	.00	1.000	.000	.00	1 .0

```
T1 BEAUMONT BEYOND FOOD HYDRAULICS                                                  0
T2 100 YEAR STORM
T3 AREA 2 (8" Storm Drain)
SO       .0002598.850  1                           2598.850
R     107.0002599.400  1      .013                                  .000    .000 0
SH    107.0002599.400  1                           2599.950
CD   1  4   1    .000    .670     .000  .000  .000   .00
Q              .900   .0
```

Program Package Serial Number: 1715

WATER SURFACE PROFILE LISTING Date: 5- 5-2020 Time: 4:25:41

BEAUMONT BEYOND FOOD HYDRAULICS
100 YEAR STORM
AREA 2 (8" Storm Drain)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
.000	2598.850	.449	2599.299	.90	3.58	.20	2599.50	.00	.45	.63	.670	.000	.00	1 .0
.492	.0051					.0082	.00	.45	1.00	.57	.013	.00	.00	PIPE
.492	2598.853	.469	2599.321	.90	3.42	.18	2599.50	.00	.45	.61	.670	.000	.00	1 .0
2.231	.0051					.0073	.02	.47	.92	.57	.013	.00	.00	PIPE
2.723	2598.864	.490	2599.354	.90	3.26	.16	2599.52	.00	.45	.59	.670	.000	.00	1 .0
5.864	.0051					.0065	.04	.49	.84	.57	.013	.00	.00	PIPE
8.587	2598.894	.513	2599.407	.90	3.11	.15	2599.56	.00	.45	.57	.670	.000	.00	1 .0
16.209	.0051					.0059	.10	.51	.77	.57	.013	.00	.00	PIPE
24.796	2598.977	.539	2599.516	.90	2.96	.14	2599.65	.00	.45	.53	.670	.000	.00	1 .0
82.204	.0051					.0056	.46	.54	.69	.57	.013	.00	.00	PIPE
107.000	2599.400	.539	2599.939	.90	2.96	.14	2600.07	.00	.45	.53	.670	.000	.00	1 .0

```
T1 BEAUMONT BEYOND FOOD MART HYDRAULICS                                          0
T2 100 YEAR STORM
T3 AREA A3
SO       .0002598.320  1                           2598.320
R       5.0002598.400  1      .013                                  .000    .000 0
SH      5.0002598.400  1                           2598.400
CD   1  4   1    .000    .670     .000  .000  .000   .00
Q             1.200   .0
```

Program Package Serial Number: 1715

WATER SURFACE PROFILE LISTING Date: 5- 5-2020 Time: 4:20: 3

BEAUMONT BEYOND FOOD MART HYDRAULICS
100 YEAR STORM
AREA A3

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
.000	2598.320	.463	2598.783	1.20	4.61	.33	2599.11	.00	.52	.62	.670	.000	.00	1 .0
2.190	.0160					.0138	.03	.46	1.25	.44	.013	.00	.00	PIPE
2.190	2598.355	.472	2598.827	1.20	4.52	.32	2599.14	.00	.52	.61	.670	.000	.00	1 .0
2.239	.0160					.0127	.03	.47	1.21	.44	.013	.00	.00	PIPE
4.429	2598.391	.494	2598.885	1.20	4.31	.29	2599.17	.00	.52	.59	.670	.000	.00	1 .0
.571	.0160					.0114	.01	.49	1.10	.44	.013	.00	.00	PIPE
5.000	2598.400	.518	2598.918	1.20	4.10	.26	2599.18	.00	.52	.56	.670	.000	.00	1 .0

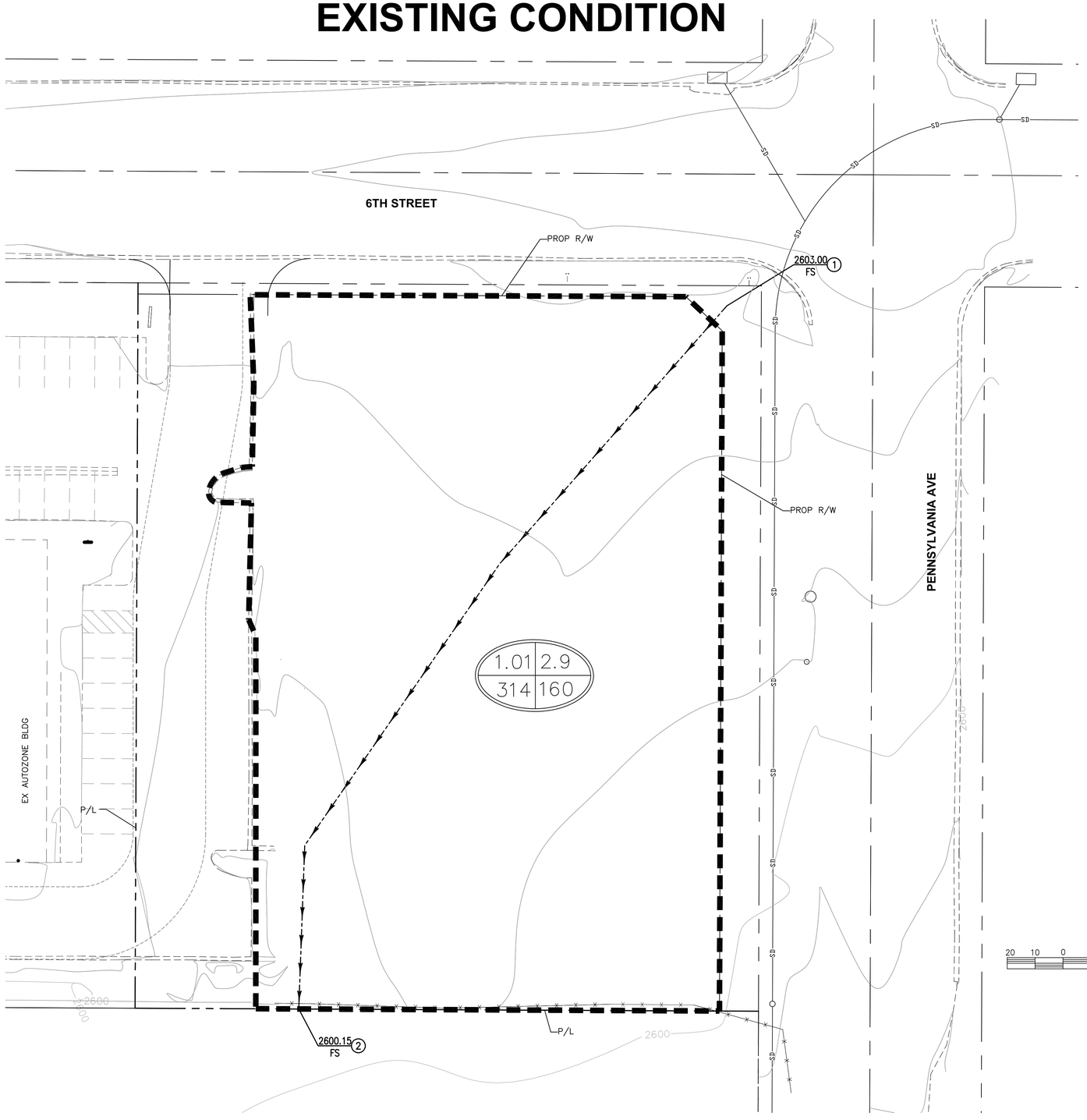
SECTION 6 – MAPS

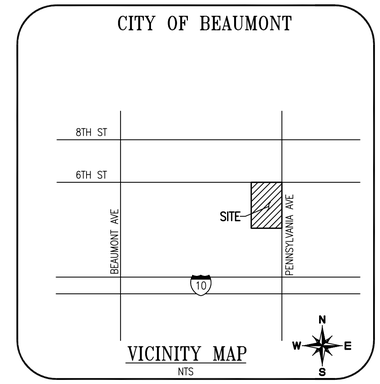
Hydrology Map - Existing Condition

Hydrology Map - Developed Condition

Hydrology Map – Developed Condition (Rational Method)

EXISTING CONDITION





SURFACE SUMMARY

EX AC	7,993 SF
DIRT	36,411 SF

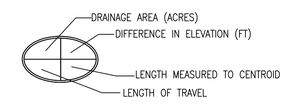
TOTAL AREA = 44,404 SF

PERCENT IMPERVIOUS = 7,993/36,411 = 18%

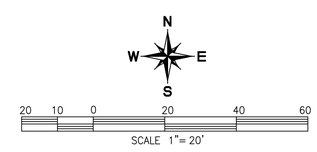
RESULTS (UNIT HYDROGRAPH METHOD)

Storm Event	Existing Condition	Developed Condition	Difference Storm Flow Dev - Ex	Flood Volume Ex	Flood Volume Developed	Difference Flood Volume Dev - Ex
Q 10 Year 3 Hour	1.4 CFS	1.4 CFS	0 CFS	4,321 CF	4,289 CF	-32 CF
Q 10 Year 6 Hour	1.3 CFS	1.3 CFS	0 CFS	4,952 CF	4,923 CF	-29 CF
Q 10 Year 24 Hour	0.5 CFS	0.5 CFS	0 CFS	7,418 CF	9,862 CF	2,444 CF
Q 100 Year 3 Hour	2.3 CFS	2.3 CFS	0 CFS	7,694 CF	7,638 CF	-56 CF
Q 100 Year 6 Hour	2.0 CFS	2.0 CFS	0 CFS	9,189 CF	9,120 CF	-69 CF
Q 100 Year 24 Hour	0.8 CFS	0.8 CFS	0 CFS	13,834 CF	16,173 CF	2,339 CF
Q 2 Year 24 Hour	0.3 CFS	0.3 CFS	0 CFS	3,273 CF	5,211 CF	1,938 CF

LEGEND



2603.00 / FS (1) — NODE ELEVATION / FINISH SURFACE — NODE #



LEGEND

- BOUNDARY
- DRAINAGE AREA BOUNDARY
- RIGHT–OF–WAY
- STREET CENTERLINE

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ENGINEER — COUNTY

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TEMECULA, CA 92591
TEL (951) 440 - 8149 / FAX (951) 303 - 6701

PREPARED UNDER THE SUPERVISION OF: R.C.E. NO. 50993 EXP. DATE: 9-30-21

THOMAS S. LOVE — DATE

BENCHMARK:

SCALE: 1"=30'

DATE: OCTOBER 21, 2019

IN THE CITY OF BEAUMONT, CALIFORNIA

APN 418-122-028

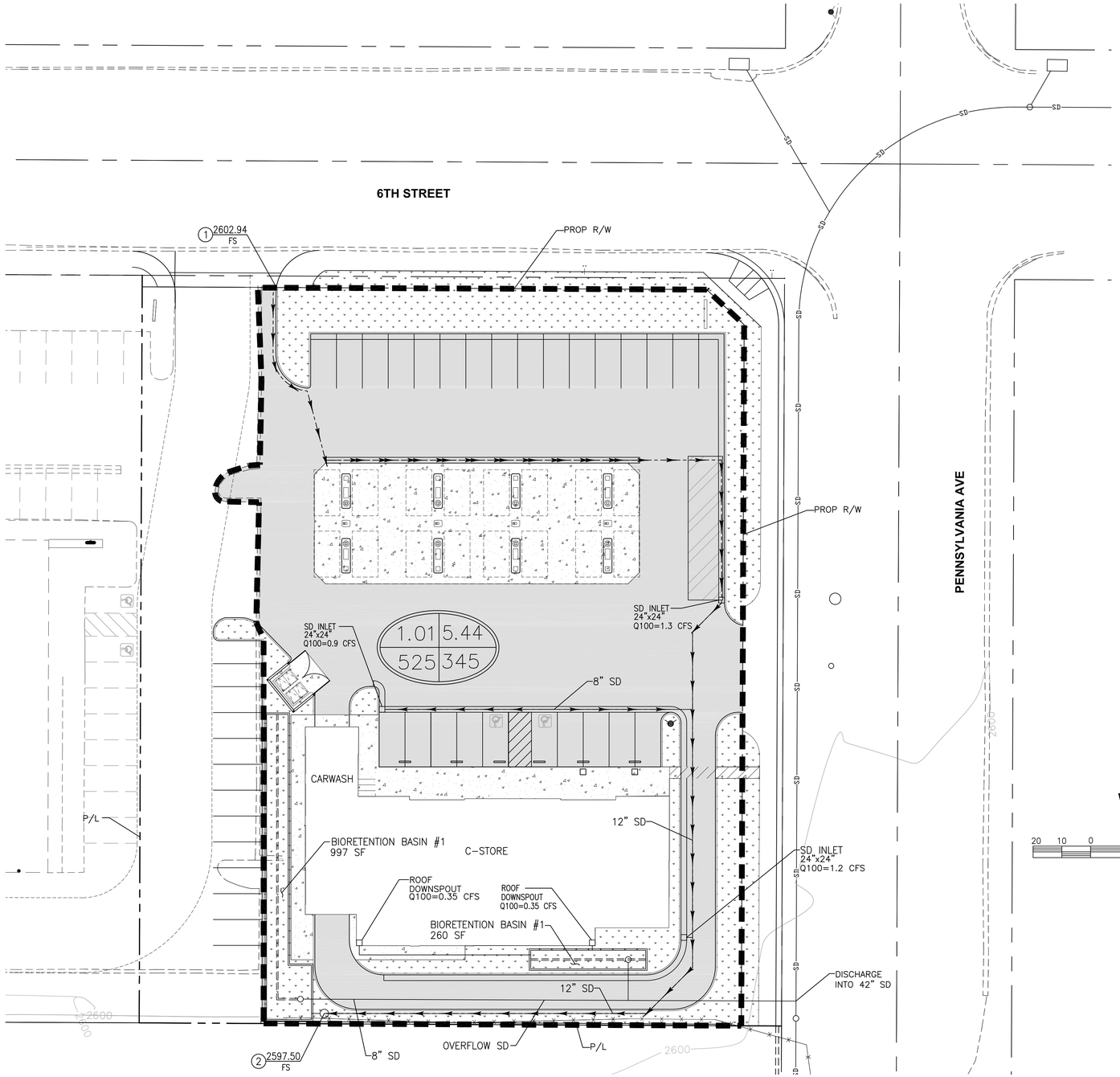
EXISTING CONDITION

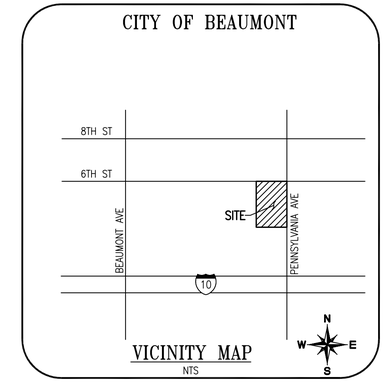
Client: FAHED — ID: 19-025

SHEET NO. 1 OF 1 SHTS.

COUNTY FILE No.

DEVELOPED CONDITION





VICINITY MAP
NTS

SURFACE SUMMARY

ROOF	6,588 SF
AC/CONCRETE	28,110 SF
LANDSCAPE AREA	9,706 SF

TOTAL AREA = 44,404 SF

PERCENT IMPERVIOUS = 34,698/44,404 = 78%

RESULTS (UNIT HYDROGRAPH METHOD)

Storm Event	Existing Condition	Developed Condition	Difference Storm Flow Dev - Ex	Flood Volume Ex	Flood Volume Developed	Difference Flood Volume Dev - Ex
Q_{10} Year 3 Hour	1.4 CFS	1.4 CFS	0 CFS	4,321 CF	4,289 CF	-32 CF
Q_{10} Year 6 Hour	1.3 CFS	1.3 CFS	0 CFS	4,952 CF	4,923 CF	-29 CF
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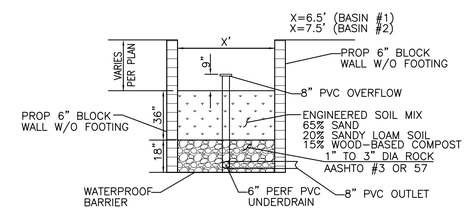
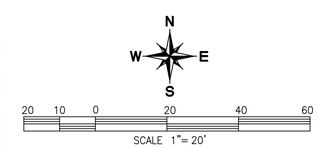
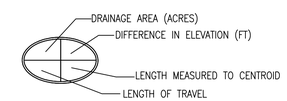


BIORETENTION BASIN
NTS





LEGEND

- BOUNDARY
- DRAINAGE AREA BOUNDARY
- RIGHT-OF-WAY
- STREET CENTERLINE
- LANDSCAPE AREA
- ASPHALT CONCRETE
- PCC CONCRETE

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BENCHMARK:

SCALE: 1"=30'

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IN THE CITY OF BEAUMONT, CALIFORNIA

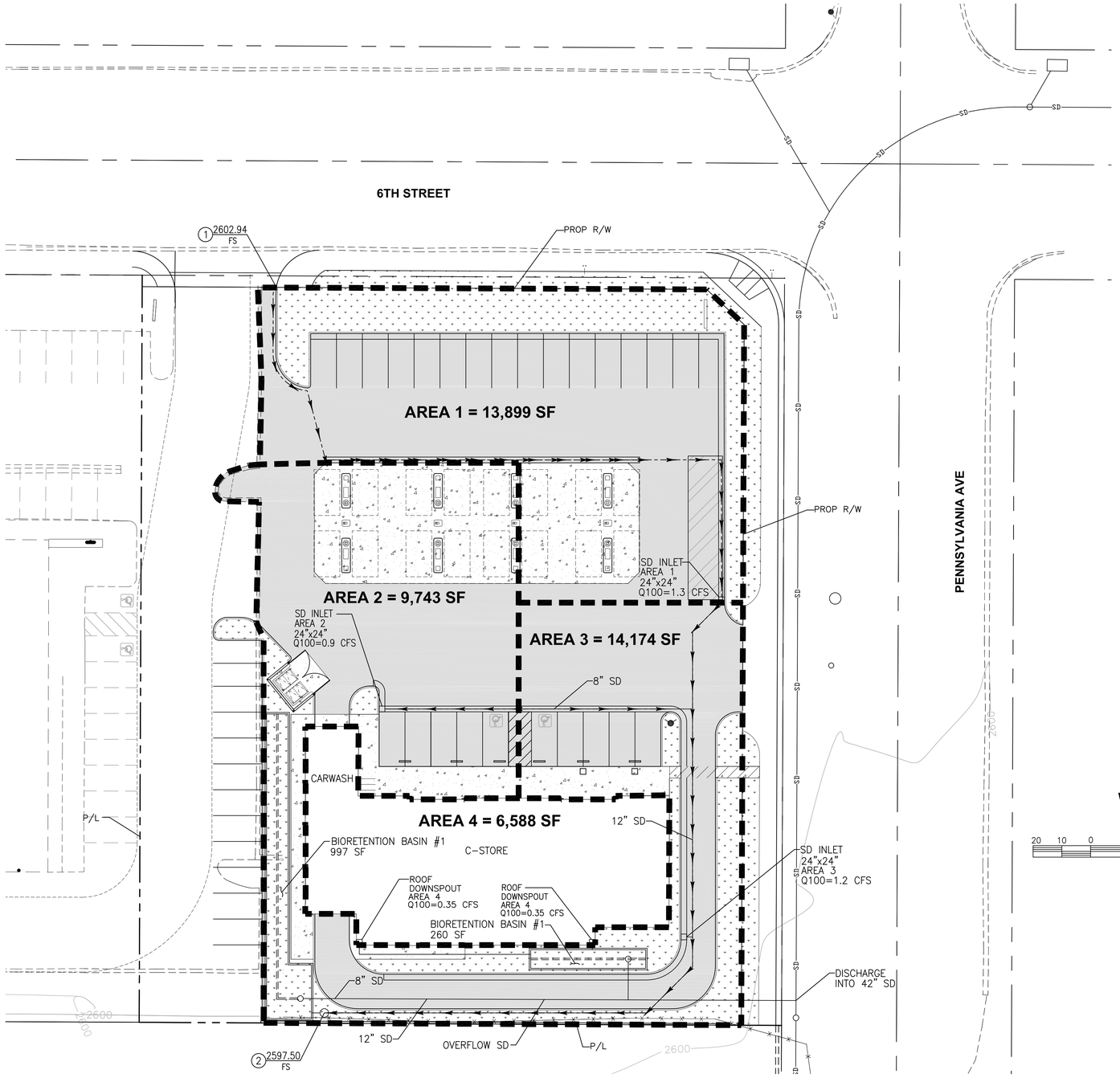
APN 418-122-028

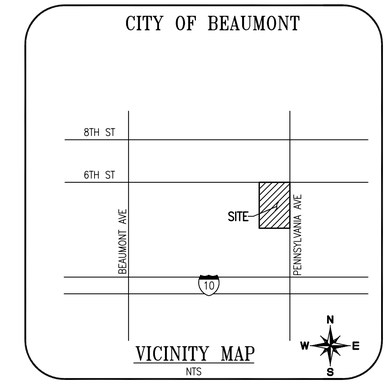
DEVELOPED CONDITION

Client: FAHED — ID: 19-025 — COUNTY FILE No.

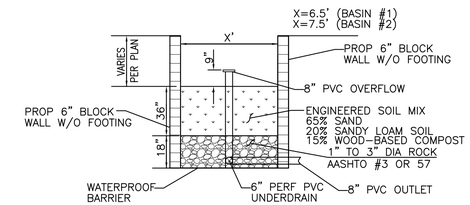
SHEET NO. 1 OF 1 SHTS.

RATIONAL METHOD (DEVELOPED CONDITION)





VICINITY MAP
NTS



BIORETENTION BASIN
NTS

AREA SUMMARY	AREA	% TOTAL
AREA 1	13,899 SF	31%
AREA 2	9,743 SF	22%
AREA 3	14,174 SF	32%
AREA 4	6,588 SF	15%
TOTAL	44,404 SF	100%

AREA 3 (NET) = AREA 3 – AREA BIORETENTION BASINS

AREA 3 (NET) = 14,174 – 260 – 997 = 12,917 SF

Storm Event	Entire Site	Area 1	Area 2	Area 3	Area 4
Q_{100}	4.3 CFS	1.3 CFS	0.9 CFS	1.2 CFS	0.7 CFS

N W E S

20 10 0 20 40 60
SCALE 1"= 20'

LEGEND

- BOUNDARY
- DRAINAGE AREA BOUNDARY
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- LANDSCAPE AREA
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THOMAS S. LOVE — DATE

BENCHMARK:

SCALE: 1"=30'
DATE: OCTOBER 21, 2019

IN THE CITY OF BEAUMONT, CALIFORNIA

APN 418-122-028

RATIONAL METHOD

Client: FAHED — ID: 19-025 — COUNTY FILE No.

SHEET NO. 1 OF 1 SHTS.

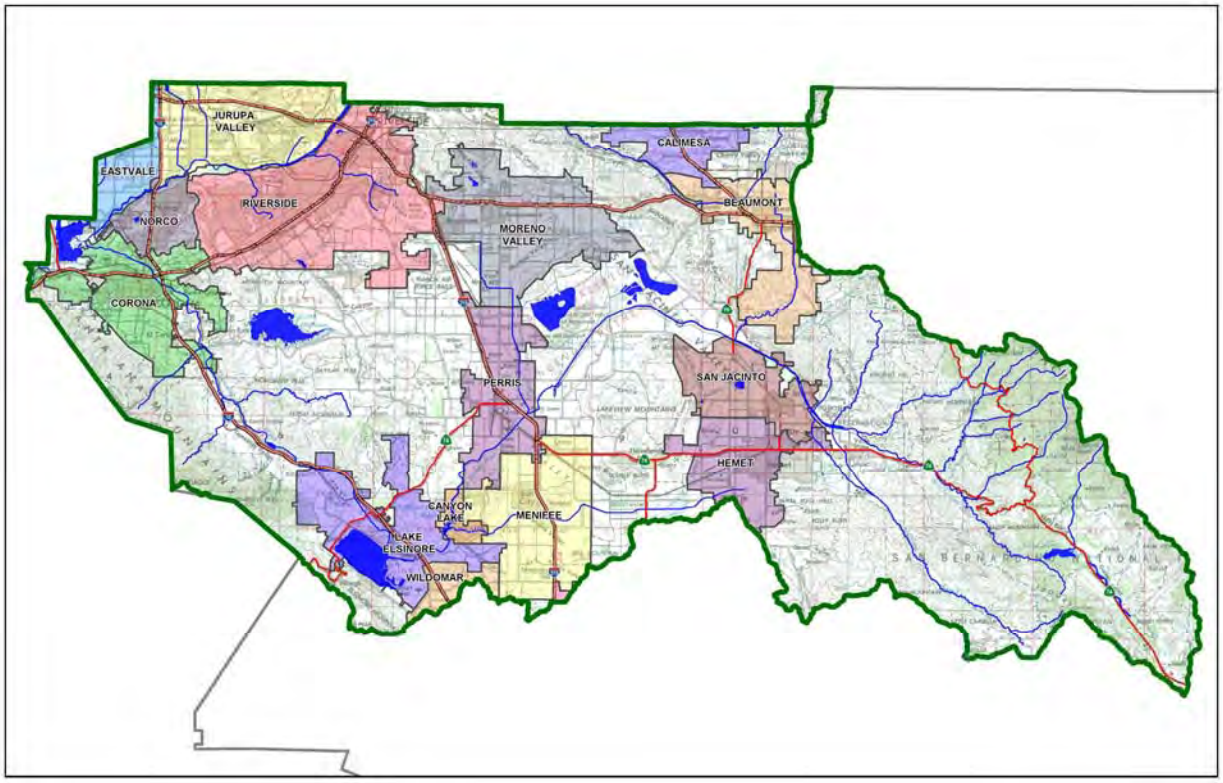
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Beyond Food Mart (Beaumont)

Development No: PW2019-0421

Design Review/Case No: 1



Contact Information:

Prepared for: Beyond Food Mart, Nick Fahed, 4300 Edison, Chino, CA 91710/(760) 810-8548

Prepared by: Love Engineering/Thomas S Love/31915 Rancho California Rd/Suite 200-166/Temecula, CA/(951) 440-8149

☒ **Preliminary**
☐ **Final**

Original Date Prepared: November 24, 2019

Revision Date(s): August 25, 2020

Prepared for Compliance with Regional Board Order No. **R8-2010-0033**

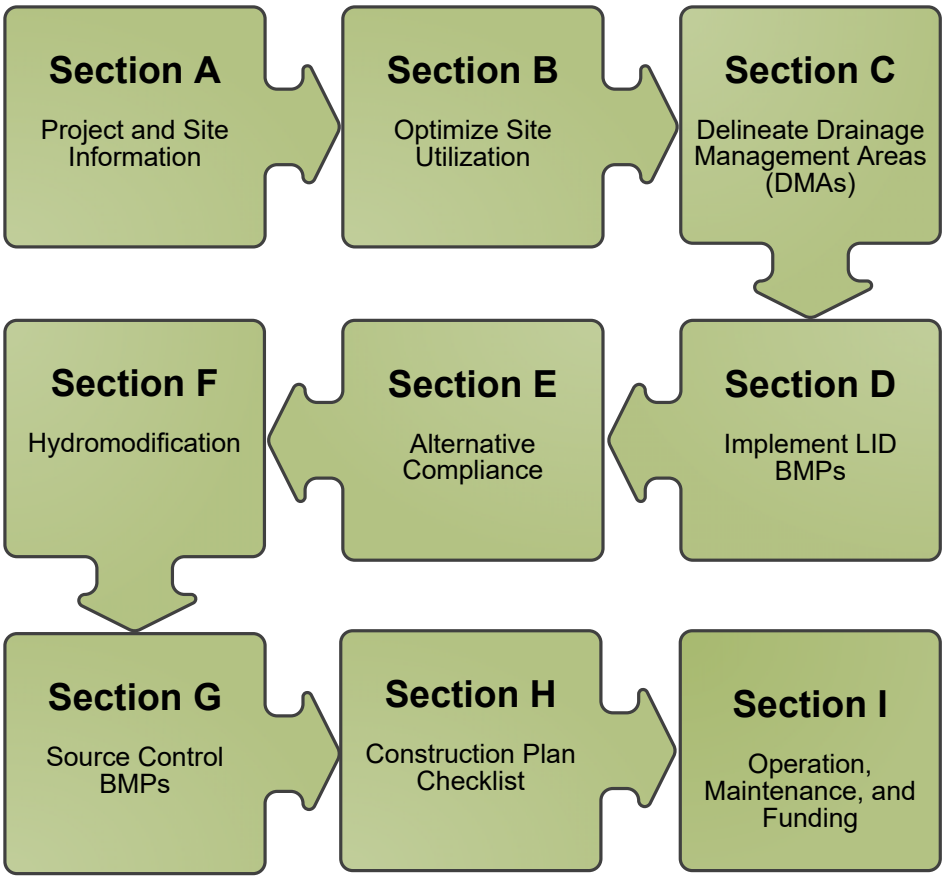
ERSC 8/31/20

Stephen Wilson

APPROVED AS SUBMITTED

A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your "how-to" manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Nick Fahed by Love Engineering for the Beyond Food Mart (Beaumont) project.

This WQMP is intended to comply with the requirements of County of Riverside for Ordinance No.457 which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under County of Riverside Water Quality Ordinance (Municipal Code SectionTitle 7, Subdivisions).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Nick Fahed

8/26/20

Owner's Signature | Date

Nick Fahed | Owner
Owner's Printed Name | Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control Best Management Practices in this plan meet the requirements of Regional Water Quality Control Board Order No. **R9-2010-0016** and any subsequent amendments thereto."

Thomas S. Love

August 25, 2020

Preparer's Signature | Date

Thomas S. Love | Principal
Preparer's Printed Name | Preparer's Title/Position

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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	Commercial
Planning Area:	N/A
Community Name:	
Development Name:	Beyond Food Mart (Beaumont)
PROJECT LOCATION	
Latitude & Longitude (DMS): 33.928929, -116.966453	
Project Watershed and Sub-Watershed: Santa Ana/Lake Elsinore	
APN(s): 418-122-028	
Map Book and Page No.: MB 6/16	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	Gas Station/Mini Mart
Proposed or Potential SIC Code(s)	4932
Total Area of Project Footprint (SF)	44,404
Total Area of proposed Impervious Surfaces within the Project Limits (SF)/or Replacement	28,110
Does the project consist of offsite road improvements?	☒ Y ☐ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the project limits (SF)	0
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	N/A
Are there any natural hydrologic features on the project site?	☐ Y ☒ N
Is a Geotechnical Report attached?	☒ Y ☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	N/A
What is the Water Quality Design Storm Depth for the project?	0.85

Future development of these parcels must be in substantial conformance with the proposed drainage areas, and BMPs (site design or otherwise) as planned in this WQMP. Otherwise, any future development proposing to alter drainage patterns or areas that affect the approved DMAs and/or BMPs must submit an addendum to this WQMP for approval by the City.

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Source Control BMPs
- Buildings, Roof Lines, Downspouts

- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Impervious Surfaces
- Standard Labeling

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Timoteo Creek Reach 3	Indicator Bacteria	GWR/REC1/REC2/WARM/WILD/RARE	2.8 miles
San Timoteo Creek Reach 2	Indicator Bacteria	GWR/REC1/REC2/WARM/WILD/RARE	7.1 miles
San Timoteo Creek Reach 1A & 1B	Indicator Bacteria	RARE, AGR, GWR, REC1, REC2, WARM, WILD	15.4 miles
Santa Ana River Reach 4	Indicator Bacteria	GWR/REC1/REC2/WARM/WILD/RARE/SPWN	22.5 miles
Santa Ana River Reach 3	Indicator Bacteria, Copper, Lead	AGR/GWR/REC1/REC2/WARM/WILD/RARE/SPWN	25.0 miles
Prado Flood Control Basin	pH	AGR/GWR/REC1/REC2/WARM/WILD/RARE/SPWN	N/A

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☐ Y	☒ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* City of Beaumont Grading Permit, Encroachment Permit, and Construction Permits	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, constraints might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. Opportunities might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

Yes, proposed grading follows existing drainage patterns

Did you identify and protect existing vegetation? If so, how? If not, why?

No existing vegetation on site

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

Natural infiltration capacity preserved in proposed landscape areas. These areas will contain reduced compaction

Did you identify and minimize impervious area? If so, how? If not, why?

Yes, impervious areas were minimized to the extent possible.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

Yes, site drains to pervious landscape areas, where possible.

PROPOSED WATER QUALIY TREATMENT

This project is proposing to use bioretention for water quality treatment and hydrology mitigation. The areas that require treatment and HCOC mitigation (building, hardscape, access aisles, and parking) will drain to two separate bioretention basins located along the western and southern boundary. Drainage will be conveyed via surface drainage and area drains. Bioretention basin #1 will treat the runoff from the roof of the building. Bioretention basin #2 will treat the runoff from the hardscape, access aisles, and parking areas. Detailed design for the surface drainage will occur during the creation of the Precise Grading Plan. The bioretention basins have been designed per Section 3.3.4 (Type 'D': Areas Draining to BMPs) of the Water Quality Management Plan Technical Guidance Document for the Santa Ana Region and HCOC storage capacity requirements. The results are summarized in Table D.3 on page 18 of this document. Details of the Bioretention Basin BMP are contained on the Water Quality Management Site Plan in Appendix 1.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1]	Area (Sq. Ft.)	DMA Type
DMA 1	Roof	6,588	Type D
DMA 2	AC/Concrete	28,110	Type D

[1]*Reference Table 2-1 in the WQMP Guidance Document to populate this column*

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
A1	9,706	Self-treating landscape area	

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet)	Storm Depth (inches)	DMA Name / ID	[C] from Table C.4 =	Required Retention Depth (inches)
		[A]	[B]		[C]	[D]

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet)	Post-project surface type	Runoff factor	Product	DMA name /ID	Area (square feet)	Ratio
	[A]		[B]	[C] = [A] x [B]		[D]	[C]/[D]

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA 1	Bioretention with underdrain (Basin #1)
DMA 2	Bioretention with underdrain (Basin #2)

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site. If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☒ Y ☐ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?		X
If Yes, list affected DMAs:		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?	X	
Describe here: Gas Station		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

X Reclaimed water will be used for the non-potable water demands for the project.

☐Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If neither of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: 0.2 acres

Type of Landscaping (Conservation Design or Active Turf): Conservative Design

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: 0.80 acres

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: 2.12

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: 1.7 acres

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
1.7 acres	0.2 acres

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: 90

Project Type: Commercial

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: 0.80 acres

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-1 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: 176

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: 141

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	Projected number of toilet users (Step 1)
141	90

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as

a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-3 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-3: N/A

Step 4: Multiply the unit value obtained from Step 4 by the total of impervious areas from Step 3 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required non-potable use (Step 4)	Projected average daily use (Step 1)
N/A	N/A

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment, unless a site-specific analysis has been completed that demonstrates technical infeasibility as noted in D.3 below.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☒ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
DMA 1	☐	☐	☒	☐	☐
DMA 2	☐	☐	☒	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

Infiltration BMP was determined to be not be feasible due to the site being developed as a gas station. It was decided that a biotretention system would better suit the site.

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First, calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second, design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Enter BMP Name / Identifier Here*		
	[A]		[B]	[C]	[A] x [C]			
DMA 1	*6,588*	*Roof*	*1*	*0.89*	*5,863*	*Design Storm Depth (in)*	*Design Capture Volume,* V_{BMP} *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA 2	*28,110*	*Ac/Concrete*	*1*	*0.89*	*25,018*			
	A_T = 34,698				Σ= 30,881	0.85	2,187	2,263

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

X LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

N/A

E.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☒ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☒ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☒ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☒	☐	☐	☐	☐	☐	☐

P = Potential
N = Not Potential
(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected
(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected
(3) A potential Pollutant is land use involving animal waste
(4) Specifically petroleum hydrocarbons
(5) Specifically solvents
(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
Total Credit Percentage[1]	

[1]*Cannot Exceed 50%*
[2]*Obtain corresponding data from Table 3-8 in the WQMP Guidance Document*

E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Area x Runoff Factor		*Hydrodynamic Separator*		
	[A]		[B]	[C]	[A] x [C]				
DMA 2	28,110	Paved	1	0.89	25,074	*Design Storm Depth (in)*	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = 28,110				Σ= 25,074	0.20	0.115 CFS		***0.9 CFS***

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12
[H] is from the Total Credit Percentage as Calculated from Table E.2 above
[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
Hydrodynamic Separator	Copper, Lead	80%

[1] *Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.*
[2] *Cross Reference Table E.1 above to populate this column.*
[3] *As documented in a Co-Permittee Approved Study and provided in Appendix 6.*

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	N/A	N/A	N/A
Volume (Cubic Feet)	N/A	N/A	N/A

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier: Site drains via a 10" PVC pipe to a concrete open channel which flows to Salt Creek. Flows then are conveyed via Salt Creek (RCFCD maintained facility) to Canyon Lake. Canyon Lake is an adequate sump.

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources***: Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.
2. ***Note Locations on Project-Specific WQMP Exhibit***: Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.
3. ***Prepare a Table and Narrative***: Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.
4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
Onsite Storm Drain Inlets	Mark all inlets with the words "Only rain in the drain" or similar	Maintain and repaint or replace inlet markings as necessary
Landscape/Outdoor Pesticide Use	Minimize use of fertilizers and pesticides. Landscaping and irrigation designed to minimize runoff.	Maintain landscaping/irrigation system discharges of sediment to minimize pesticides, mowings, trimmings, and excess irrigation water through weekly inspection and maintenance.
Refuse Areas (Trash Enclosure)	Trash enclosure to be covered with solid roof and Signs will be posted on or near dumpster with the words "Do not dump hazardous materials here"	Repair or replace leaky receptacles. Keep receptacles covered. Replace sign if needed.
Plazas/Sidewalks/Parking Lot		Vacuum sweep plazas, sidewalks, and parking lots weekly. Collect wastewater from pressure washing. Collect washwater containing any cleaning agent or degreaser for proper disposal.

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: Property owner to maintain BMP's

Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

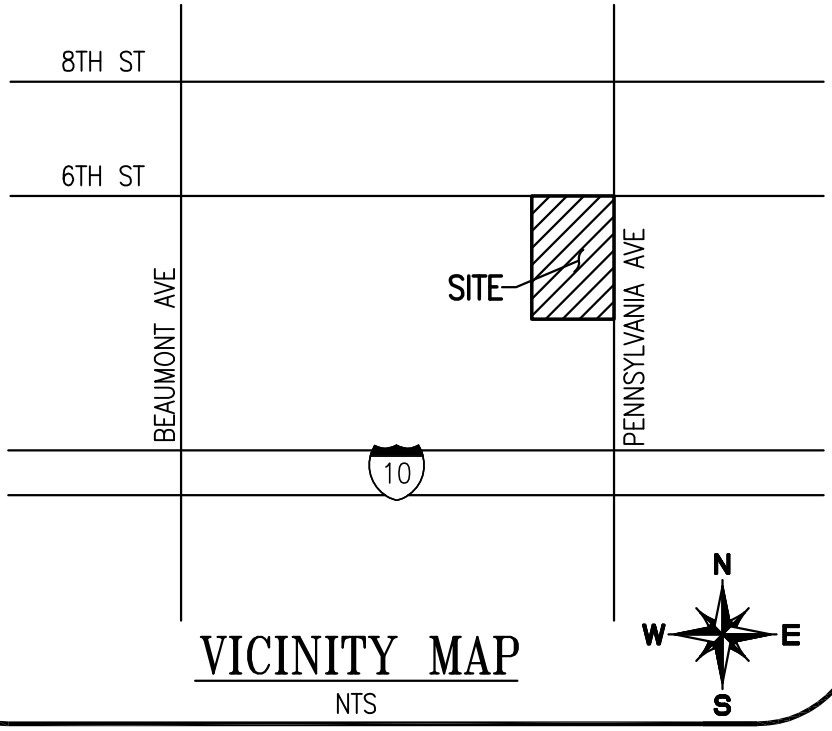
☐ Y ☒ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map

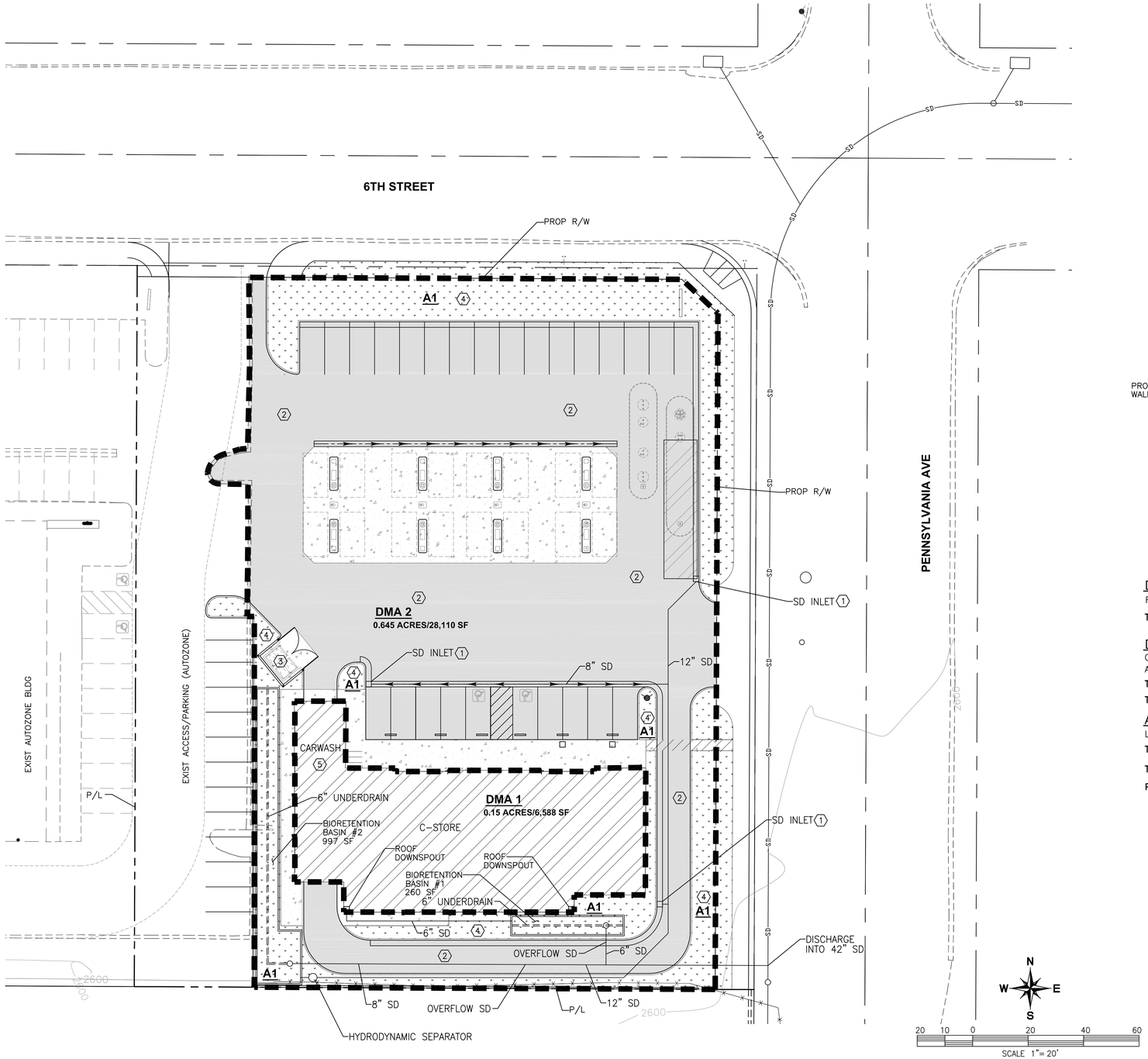
CITY OF BEAUMONT

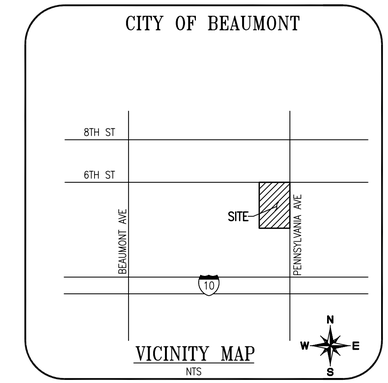


VICINITY MAP

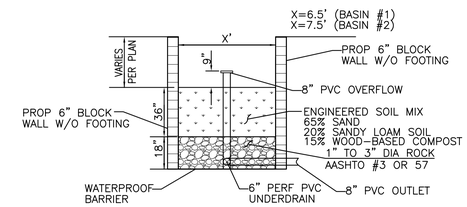
NTS

WQMP SITE PLAN





VICINITY MAP
NTS



BIORETENTION BASIN
NTS

SOURCE CONTROL BMP NOTES

1. ON-SITE CATCH BASINS SHALL BE LABELED WITH "ONLY RAIN IN THE DRAIN STENCIL OR PLACARD
2. PAVED AREAS OF SITE TO BE VACUUM SWEPT ON A WEEKLY FREQUENCY
3. TRASH ENCLOSURE TO BE CONSTRUCTED WITH A SOLID ROOF COVER
4. MAINTAIN LANDSCAPING/IRRIGATION SYSTEM TO PREVENT DISCHARGES OF SEDIMENT, MOWINGS, AND TRIMMINGS, PESTICIDES AND EXCESS IRRIGATION WATER BY WEEKLY INSPECTIONS AND MAINTENANCE
5. CARWASH FACILITY TO BE SPILL CONTAINED , COVERED, AND PLUMBED TO A SANITARY SEWER FOR WASTEWATER DISPOSAL.

DMA 1 SURFACE SUMMARY

ROOF (C-STORE/CARWASH)	6,588 SF
TOTAL IMPERVIOUS	6,588 SF

DMA 2 SURFACE SUMMARY

CONCRETE	6,869 SF
AC	21,241 SF
TOTAL IMPERVIOUS	28,110 SF

TOTAL IMPERVIOUS AREA (DMA 1 & DMA 2)=6,588+28,110=34,698 SF

A1 SELF TREATING AREAS

LANDSCAPE AREAS (SELF RETAINING)	9,706 SF
TOTAL PERVIOUS (SELF RETAINING)	9,706 SF

TOTAL AREA = 44,404 SF

PERCENT IMPERVIOUS = 34,698/44,404 = 78%

LEGEND

- BOUNDARY
- DMA BOUNDARY
- RIGHT-OF-WAY
- STREET CENTERLINE
- ROOF
- LANDSCAPE AREA (SELF RETAINING)
- ASPHALT CONCRETE
- PCC CONCRETE

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TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
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The private engineer signing these plans is responsible for accuracy and acceptability of the design hereon,in the event of discrepancies arising after county approval or during construction, the private engineer shall be responsible for determining an acceptable solution and revising the plans for approval by the county.

DATE	BY	MARK	REVISIONS	APPR	DATE

ENGINEER — COUNTY

SEAL: REGISTERED PROFESSIONAL ENGINEER — THOMAS S. LOVE — No. C 50993 Exp. 9-30-21 — CIVIL — STATE OF CALIFORNIA

LOVE ENGINEERING
PLANNING ♦ ENGINEERING ♦ SURVEYING
31915 RANCHO CALIFORNIA ROAD/SUITE 200-166
TEMECULA, CA 92591
TEL (951) 440 - 8149 / FAX (951) 303 - 6701

PREPARED UNDER THE SUPERVISION OF: R.C.E. NO. 50993 EXP. DATE: 9-30-21
THOMAS S. LOVE — DATE

BENCHMARK:

SCALE: 1"=20'
DATE: APRIL 10, 2020

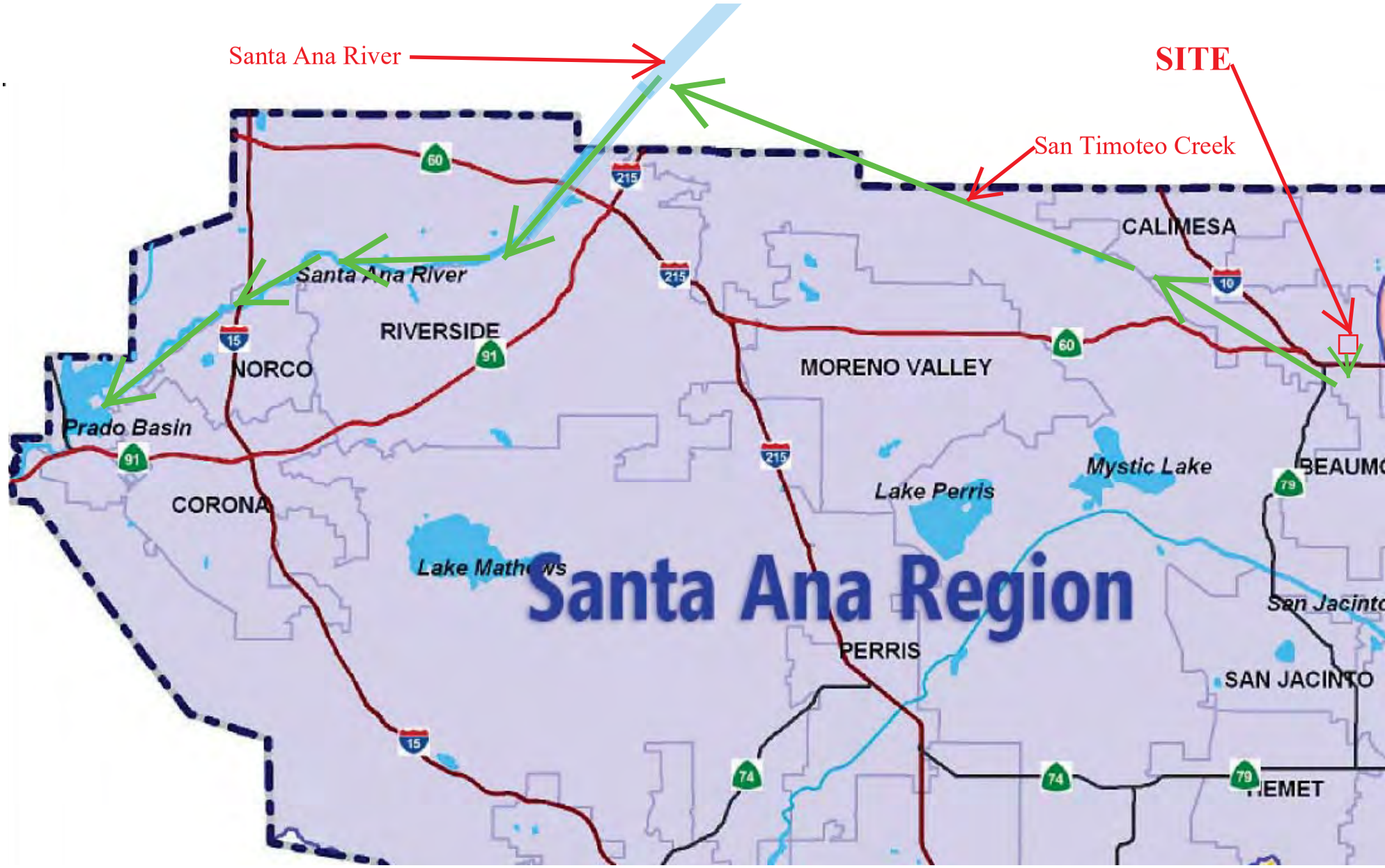
IN THE CITY OF BEAUMONT, CALIFORNIA

APN 418-122-028
WQMP SITE PLAN

Client: FAHED — ID: 19-025 — COUNTY FILE No.

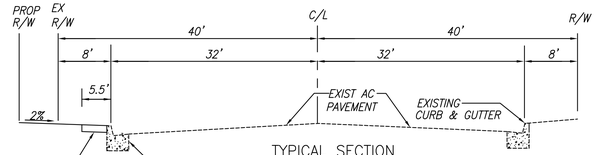
SHEET NO. 1 OF 1 SHTS.

RECEVING WATERS EXHIBIT

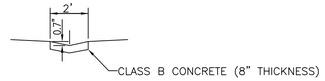


Appendix 2: Construction Plans

Conceptual Grading Plan



TYPICAL SECTION
EAST 6TH STREET
NTS



RIBBON GUTTER DETAIL (9)
NTS

SOURCE OF TOPOGRAPHY

CONTOURS & ELEVATIONS PROVIDED FROM FIELD DATA GATHERED ON NOVEMBER 3, 2019 BY:
HESS DEVELOPMENT
28039 SCOTT ROAD, SUITE D-387
MURRIETA, CA 92563
951-325-2200

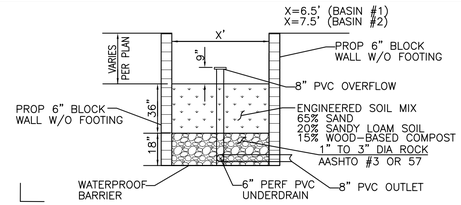
BASIS OF BEARINGS

BASIS OF BEARINGS IS N00°14'10"E ALONG THE CENTERLINE OF PENNSYLVANIA AVE PER RS 151/28-29

SITE DATA

GROSS ACREAGE: 1.33 acres
NET ACREAGE: 1.25 acres
NET USEABLE: 1.25 acres

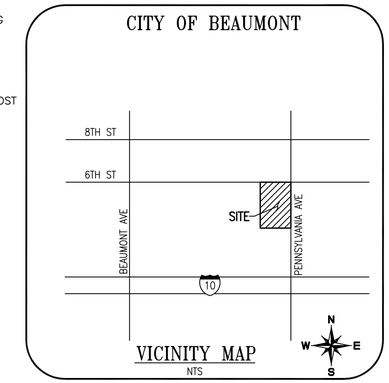
EARTHWORK: CUT: 200 CY
FILL: 200 CY



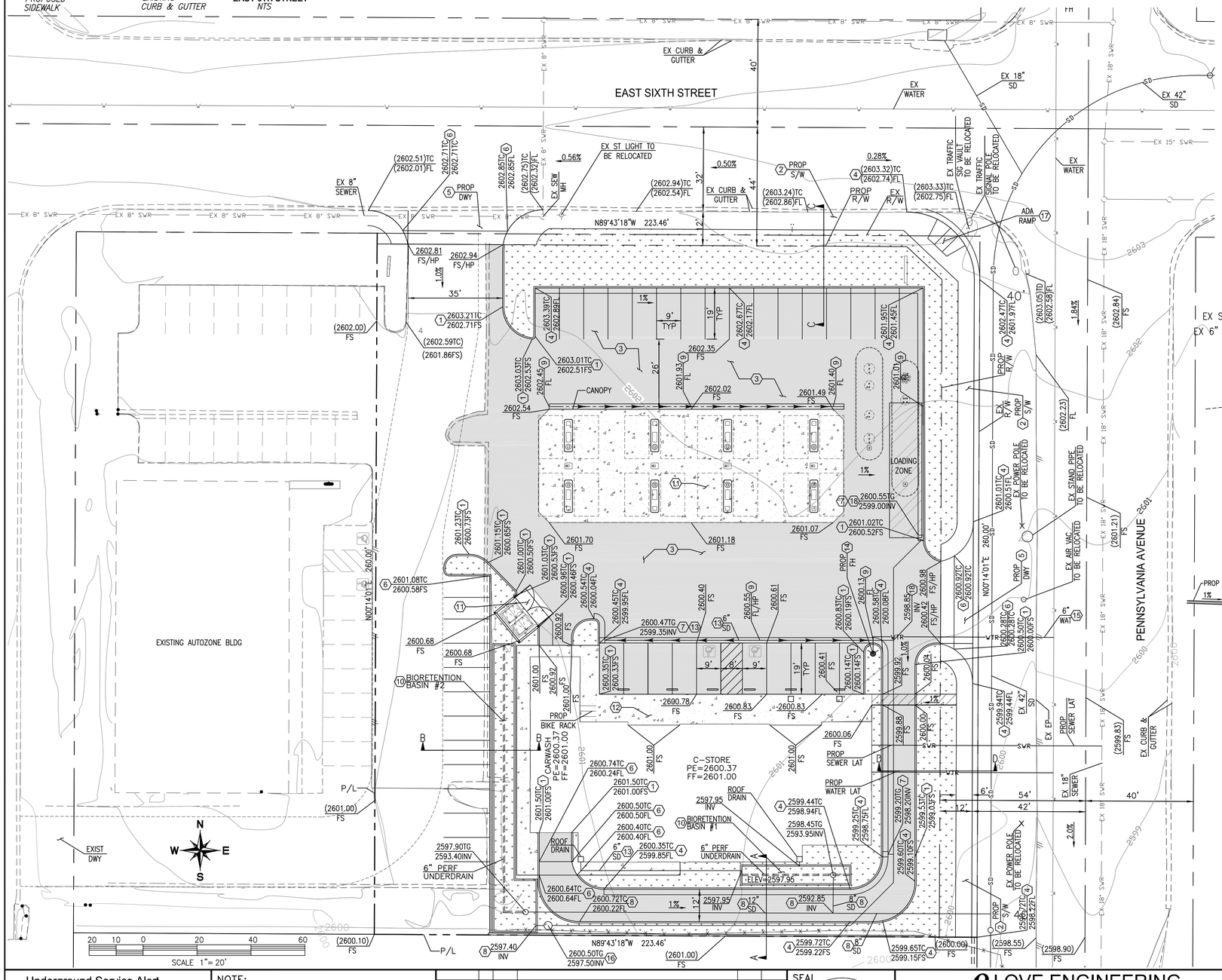
BIORETENTION BASIN (10)
NTS

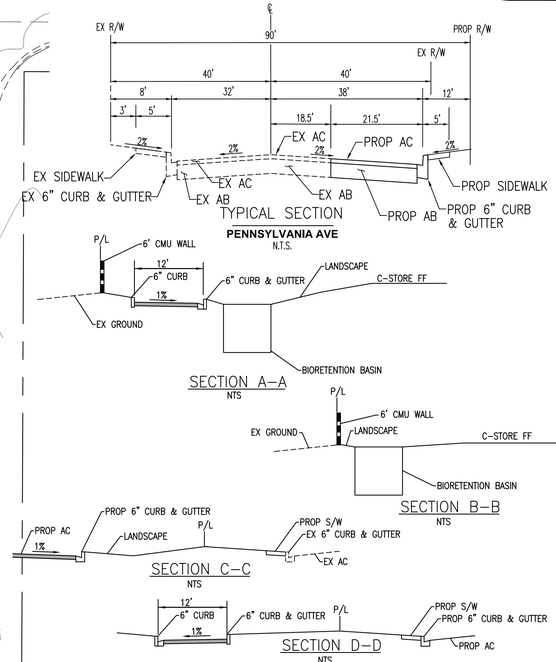
ABBREVIATIONS

DWY	DRIVEWAY		PE	PAD ELEVATION
EX	EXISTING		PIV	POST INDICATOR VALVE
FF	FINISHED FLOOR		P/L	PROPERTY LINE
FH	FIRE HYDRANT		PROP	PROPOSED
FG	FINISHED GRADE		R/W	RIGHT-OF-WAY
FL	FLOW LINE		SD	STORM DRAIN
FS	FINISHED SURFACE		S/W	SIDEWALK
HP	HIGH POINT		TC	TOP OF CURB
INV	INVERT		TD	TOP OF DIKE



VICINITY MAP
NTS





TYPICAL SECTION
PENNSYLVANIA AVE
N.T.S.

SECTION A-A
NTS

SECTION B-B
NTS

SECTION C-C
NTS

SECTION D-D
NTS

APN:

APN 418-122-028

OWNER/APPLICANT:

1151 E 6TH STREET, LLC
4300 EDISON
CHINO, CA 91710
(760) 810-8548

ENGINEER/REPRESENTATIVE:

LOVE ENGINEERING
ATTN: THOMAS LOVE
31915 RANCHO CALIFORNIA ROAD, SUITE 200-166
TEMECULA, CA 92591
PHONE: (951) 440-8149 FAX: (951) 303-6701

SOILS ENGINEER

SOIL EXPLORATION COMPANY
ATTN: GENE LUU
7535 JURUPA AVE.
RIVERSIDE, CA 92504
T: (951) 688-7200

BENCHMARK

BENCHMARK IS COUNTY OF RIVERSIDE C-3 ON BEAUMONT AVENUE AND BRIDGE OVER I-10, 37' WEST OF CL BEAUMONT AVE, AT SOUTH END OF BRIDGE, 2' EAST OF SIDEWALK

ELEV-2606.072
DATUM-NGVD29

LEGAL DESCRIPTION:

PARCEL B AS SHOWN ON LOT LINE ADJUSTMENT NO. OS-LLA-03, AS EVIDENCED BY DOCUMENT RECORDED MAY 11, 2005 AS INSTRUMENT NO. 2005-0372688 OF OFFICIAL RECORDS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
THAT PORTION OF LOT 1, BLOCK 92 OF THE AMENDED MAP OF THE TOWN OF BEAUMONT AS FILED IN MAP BOOK 6 PAGES 16, RECORDS OF RIVERSIDE COUNTY, STATE OF CALIFORNIA, LOCATED IN SECTION 10, TOWNSHIP 3 SOUTH, RANGE 1 WEST, SAN BERNARDINO MERIDIAN, DESCRIBED AS FOLLOWS:
BEGINNING AT THE NORTHWEST CORNER OF SAID LOT 1; THENCE EAST ALONG THE NORTHERLY LINE OF SAID LOT 1 A DISTANCE OF 111.54 FEET TO THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE, EAST CONTINUING ALONG SAID NORTHERLY LINE 223.46 FEET TO THE NORTHEAST CORNER OF SAID LOT 1; THENCE, SOUTH ALONG THE EASTERLY LINE OF SAID LOT 1, A DISTANCE OF 260.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT 1; THENCE WEST ALONG THE SOUTHERLY LINE OF SAID LOT 1, A DISTANCE OF 223.46 FEET; THENCE, NORTH A DISTANCE OF 260.00 FEET TO THE TRUE POINT OF BEGINNING.

CONSTRUCTION NOTES

1. INSTALL 6" CURB (TYPE D) PER COUNTY OF RIV STD 204
2. INSTALL SIDEWALK PER COUNTY OF RIV STD 401
3. INSTALL 4"AC OVER 6" CLASS II AGGREGATE BASE
4. INSTALL 6" CURB & GUTTER (TYPE A) PER COUNTY OF RIV STD 200
5. INSTALL DRIVEWAY APPROACH COUNTY OF RIV STD 207A
6. INSTALL 0" CURB PER COUNTY OF RIV STD 204
7. INSTALL 24"x24" NDS OR EQUIVIALENT INLET GRATE
8. INSTALL 8" PVC (SDR 35) STORM DRAIN
9. INSTALL RIBBON GUTTER PER DETAIL HEREON
10. INSTALL BIORETENTION BASIN PER DETAIL HEREON
11. INSTALL 6" PCC CONCRETE
12. INSTALL 4" PCC CONCRETE
13. INSTALL 6" PVC (SDR 35) STORM DRAIN
14. INSTALL FH ASSEMBLY PER BCVWD STD DWG PLATE 1
15. INSTALL 6" PVC (C-900/CL150) WATER LINE
16. INSTALL ADS BARRACUDA S4 OR EQUIVALENT HYDRODYNAMIC SEPERATER
17. INSTALL CURB RAMP (TYPE A) PER COUNTY OF RIV STD 403
18. INSTALL 12" PVC (SDR 35) STORM DRAIN

LEGEND

- BOUNDARY
- EXIST SEWER
- EXIST WATER
- RIGHT-OF-WAY
- STREET CENTERLINE
- SEWER (PROP)
- WATER (PROP)
- ADA PATH OF TRAVEL
- LANDSCAPE AREA
- ASPHALT CONCRETE
- PCC CONCRETE

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DATE	BY	MARK	REVISIONS	APPR	DATE
				ENGINEER	COUNTY

SEAL
REGISTERED PROFESSIONAL ENGINEER
THOMAS S. LOVE
No. C 50993
Exp. 9-30-21
CIVIL
STATE OF CALIFORNIA

LOVE ENGINEERING
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PREPARED UNDER THE SUPERVISION OF:
R.C.E. NO. 50993
EXP. DATE: 9-30-21
THOMAS S. LOVE — DATE

BENCHMARK:
SEE ABOVE

SCALE: 1"=20'
DATE: APRIL 10, 2020

IN THE CITY OF BEAUMONT, CALIFORNIA

APN 418-122-028
CONCEPTUAL GRADING PLAN

Client: FAHED
ID: 19-025
COUNTY FILE No.

SHEET NO. 1 OF 1 SHTS.

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

SOIL
EXPLORATION
COMPANY, INC.

Soil Engineering, Environmental Engineering, Materials Testing, Geology

October 30, 2019

Project No. 19196-01

TO: Beyond Food Mart, Inc.
4300 Edison Ave.
Chino, CA 91710

ATTENTION: Michael Ramirez

SUBJECT: Preliminary Soil Investigation and Infiltration Tests Report, Proposed Gas Station with Drive Thru and Car Wash Tunnel, SWC E. 6th Street and Pennsylvania Avenue (APN 418-122-028), City of Beaumont, California

Introduction

In accordance with your authorization, Soil Exploration Co., Inc. has performed a preliminary soil investigation and infiltration tests for the subject site (see Figure 1, Site Location Map). The accompanying report presents a summary of our findings, conclusions, recommendations and limitations of our work for construction of the proposed gas station with drive thru, car wash tunnel and associated parking and driveway(s).

Scope of Work

- Review soils, geologic, seismic, groundwater data and maps in our files.
- Perform exploration of the site by means of three 8" diameter borings, 16.5 to 25 feet deep, at readily accessible locations.
- Field Engineer (California Registered RCE) for logging, sampling of select soils, observation of excavation resistance, record SPT blow counts and water seepage (if any).
- Perform basic laboratory testing on select soil samples, expected to include moisture, density, sand equivalent, expansion index and water soluble sulfates.
- Perform digitized search of known faults within a 50-mile radius of the site.
- Determine California Building Code (CBC) 2016 seismic parameters for the site.
- Consult with project architect/civil design engineer.
- Perform two shallow infiltration tests at locations suggested by you.
- Prepare a report of our findings, conclusions and recommendations for site preparation, including overexcavation/removal depth, allowable bearing value, foundation/slab-on-grade depth/thickness recommendations, excavation characteristics, lateral static/seismic earth pressures for retaining walls design, general grading and grading specifications, California Building Code (2016) seismic design coefficient, Cal/OSHA soil classification and infiltration rate in inches/hour.

Existing Site Condition

The rectangular shaped, relatively flat, vacant site is located on the southwest corner of E. 6th Street and Pennsylvania Avenue in the City of Beaumont, Riverside County, California. E. 6th Street is a paved road with curbs, gutters and sidewalks and Pennsylvania Avenue is a paved road with no curbs, gutters and sidewalks. A chain link fence borders the site on the south side. An Auto Zone business is located on adjacent property to the west and adjacent property to the south is vacant. Vegetation consists of dense weeds.

7535 Jurupa Ave., Unit C • Riverside, CA 92504 • Tel: (951) 688-7200 • Fax: (951) 688-7100
soilexploration@yahoo.com • www.soilexp.com

The approximate locations of the above and other features are shown on Exploratory Boring and Infiltration Tests Location Map (Plate 1).

Proposed Development

We understand that a gas station with drive thru, car wash tunnel and related improvements are proposed at the site. We understand that the proposed structures will be wood frame and/or steel construction with concrete slabs supported on prepared subgrade. Based on the relatively flat topography of the site, modest cut or fill grading and no significant cut or fill slopes are proposed.

Field Work

Three exploratory borings were drilled on October 17, 2019, to a maximum depth of 25 feet below existing ground surface, utilizing a B-53 mobile drill rig equipped with 8-inch diameter hollow stem auger. Refer to Plate 1 for boring locations. Standard Penetration Tests (SPT) blow counts were recorded for the earth materials. Relatively undisturbed samples of the soils were also obtained by utilizing California Ring Sampler.

In general these borings revealed that the site area is underlain by alluvial soils consisting of silty sand (USCS "SM"). The earth materials are medium dense to very dense. Geologic Map of the Beaumont Quadrangle shows the site area is underlain with alluvial-fan deposits (see Figure 2). Detailed descriptions of the earth materials encountered are presented in the form of Geotechnical Boring Logs in Appendix B.

Laboratory Testing

Laboratory tests were performed for select soils samples. The tests consisted primarily of natural moisture contents, dry density and water soluble sulfates. . Laboratory test results are presented in Appendix C and with Geotechnical Boring Logs in Appendix B.

Groundwater/Liquefaction

Groundwater, seepage or wet soils were not encountered in our exploratory borings, drilled to a maximum depth of 25 feet, at the time this work was performed. Groundwater study is not within the scope of this work. However groundwater data from State well in the vicinity of the site is tabulated below (see Figure 1, Site Location Map, for location of well):

State Well No.	WSE* (ft)	Date Measured	Distance/Location Relative to Site	Estimated Depth of Water Below Site (ft)
03S01W12001S	2191.4	11/17/2011	E/1.2 miles	401
	2189.5	4/23/2019		390.5

* WSE = Water Surface Elevation

Liquefaction occurs when loose, fine grained (poorly graded), saturated cohesionless soils are subject to ground shaking during an earthquake of large magnitude. Liquefaction potential in general is relatively high when the ground water table is less than thirty feet below ground surface. Based on the Riverside County GIS map, the site is located in a zone of low liquefaction potential (see Figure 3). Considering depth to groundwater (over 300 feet below ground surface), the potential for liquefaction at the site is very low.

Seismicity/Faulting

The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone or County of Riverside fault zone.

A computer search of known Quaternary major faults within 50 miles of the site from USGS National Seismic Hazard Maps is presented in Appendix D. Please note that it is probable that not all-active or potentially active faults in the region have been identified. Furthermore, seismic potential of the smaller and less notable faults is not sufficiently developed for assignment of maximum magnitudes and associated levels of ground shaking that might occur at the site due to these faults.

Conclusions

- Any vegetable matter, existing structures, old foundations, seepage pits, leach lines, septic tanks, old fills, buried utilities/irrigation lines, etc. and deleterious materials associated with previous use of the site would require removal from the proposed building/grading areas.

- Overexcavation and recompaction of surficial soils should be anticipated to provide adequate and uniform support for the proposed building(s), pavement and settlement sensitive improvements. All earth materials encountered during our exploration can be excavated with normal grading equipment in good working condition.

- Based on observations and soil classification, the expansion potential of the sandy foundation soils at the site is expected to be very low (EI<20).

- The use of shallow spread footings and caissons appears feasible for the proposed building/canopy columns support.

- Site is located approximately 5.90 miles from the San Jacinto fault. The site is located in a region of generally high seismicity, as is all of Southern California. During its design life, the site is expected to experience moderate to strong ground motions from earthquakes on regional and/or nearby causative faults.

- There is a 2 percent probability in 50 years (2475 year return period) that peak ground acceleration at the site will exceed 0.546g (see Appendix D).

- Based on Riverside County GIS map, the site is in an area of low liquefaction potential (see Figure 3).

- Based on Riverside County GIS map, the southerly portion of the site is located in a flood zone (see Figure 3). Flooding potential of the site should be determined by the design civil engineer and considered in planning and construction.

- The potential for seismically induced dynamic settlement of the onsite sandy soils during a strong earthquake is low, however cannot be precluded. This would be partially mitigated by overexcavation and recompaction of the upper foundations soils.

- Groundwater and/or seepage were not encountered during our subsurface investigation. Our experience indicates that surface or near-surface groundwater conditions can develop in areas where groundwater conditions did not exist prior to site development, especially in areas where a substantial increase in surface water infiltration results from landscape irrigation. We have no way of predicting depth to the groundwater which may fluctuate with seasonal changes and from one year to the next due to precipitation, irrigation, land use, climatic conditions as well as other factors. Subdrains, horizontal drains or other devices may be recommended in future for graded areas that exhibit nuisance seepage conditions.

Recommendations

Site Preparation/Overexcavation

All grading and backfills should be performed in accordance with City of Beaumont Grading Ordinance and the attached General Earthwork and Grading Specifications (Appendix E), except as modified in the text of this report. The proposed grading area should be cleared of existing structures, vegetation and deleterious material which should be hauled off site.

New buildings/structures should be provided with a compacted fill mat that extends to at least 5 feet beyond the structure lines in plan (where practical) and to a depth of at least 3 feet below existing ground or proposed grade, whichever is deeper. The excavated bottoms should be cleaned of roots, soft spots, deleterious materials, old fills, etc. As a result, deeper excavations should not be precluded. After cleaning of the excavated bottom, the exposed surfaces should be further scarified to a depth of at least 6 inches, thoroughly watered and recompacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557-12 Test Method, prior to placement of fill. All fills should be compacted to at least 90 percent of the maximum dry density.

Compacted Fills/Imported Soils

Any soil to be placed as fill, whether presently onsite or import, should be approved by the soil engineer or his representative prior to its placement. All onsite soils to be used as fill should be cleansed of any roots or other deleterious materials. Cobbles larger than 3 inches in diameter should not be placed in the vicinity of foundations and for utility line backfills. All fills should be placed in 6 to 8 inch loose lifts, thoroughly watered, mixed and compacted to at least 90 percent relative compaction. This is relative to the maximum dry density determined by ASTM 1557-12 Test Method.

Any imported soils should be sandy (preferably (USCS "SM" or "SW" and very low in expansion potential, EI<20) and approved by the soil engineer. The soil engineer or his representative should observe the placement of fill and take sufficient tests to verify the moisture content and the uniformity and degree of compaction obtained.

Foundation Design/Footings

Following site preparation, the use of shallow spread footings is feasible. A maximum allowable bearing value of 2000 psf is recommended. This bearing pressure has been established based on the assumption that the footings will be embedded at least 18 inches below lowest adjacent firm grade and into the onsite compacted soil mat, and measure at least 15 inches in width. Isolated column footings should be embedded at least 24 inches below lowest adjacent firm grade. This bearing value may be increased by one third for temporary (wind or seismic) loads. Reinforcement of the footings should be determined by qualified structural engineer, however minimum reinforcement of two No. 5 bars at top and two at bottom of continuous footings is recommended.

Foundation Design/Canopy Caisson

Typical canopy caisson should be 3.5 to 4 feet in diameter and extend to a depth of at least 6 feet below ground surface. An allowable bearing value of 2000 psf and lateral bearing of 300 psf/ft (maximum 3000 pcf) may be used in design.

Concrete Slabs-On-Grade

Floor slabs-on-grade should be at least 4 inches thick and should be reinforced with at least No. 3 bars at 18-inches on-center both ways, properly centered in mid-thickness of slabs (structural recommendations govern). Thicker slabs (at least 8 inches thick and supported on 4-inch thick aggregate base) should be considered for canopy area and driveways by structural design engineer based on the use of facilities.

A modular of subgrade reaction (k) value of 250 psi/inch may be used in the design of rigid slabs. A moisture barrier comprised of 10-mil Visqueen protected with 2-inches of sand above and 2-inches of sand below the Visqueen should be provided for office areas and where moisture intrusion from slabs-on-grade is objectionable. The Visqueen member should be lapped and sealed around all utility conduits. We recommend that a slipsheet (or equivalent) be utilized if grouted tiles or other crack sensitive flooring (such as marble tiles) is planned directly on concrete slabs.

Concrete Joints

The joints spacing for concrete slabs should be determined by the project architect. Joints should be laid out to form approximately square panels (equal transverse and longitudinal joint spacing). Rectangular panels, with the long dimension no more than one-and-one-half times the short, may be used when square panels are not feasible. The depth of longitudinal and transverse joints should be one-fourth the depth of the slab thickness.

Joint layout should be adjusted so that the joints will line up with the corners of structures, small foundations and other built-in structures. Acute angles or small pieces of slab curves as a result of joints layout should not be permitted.

Concrete Slump/Curing

The use of mechanically compacted/dense concrete with slump not exceeding 4 inches is recommended. Fresh concrete should be cured by protecting it against loss of moisture, rapid temperature change, and mechanical injury for at least 3 days after placement. Moist curing, waterproof paper, white polyethylene sheeting, white liquid membrane compound, or a combination thereof may be used. After finishing operations have been completed, the entire surface of the newly placed concrete should be covered by whatever curing medium is applicable to local conditions and approved by the engineer. The edges of concrete slabs exposed by the removal of forms should be protected immediately to provide these surfaces with continuous curing treatment equal to the method selected for curing the slab surfaces. The contractor should have at hand and ready to install before actual placement begins the equipment needed for adequate curing of the concrete.

Special Considerations/Excess Soils From Foundation Excavations

Excess soils generated from foundation excavations should not be placed on slabs and driveways without proper moisture and compaction. Slab subgrade should be verified to contain 1.2 times the soil optimum moisture content to a depth of 6 inches prior to placement of slab building materials. Moisture content must be tested in the field by the soil engineer. The addition of fiber mesh in the concrete and careful control of water/cement ratios may lessen the potential for slab cracking.

In hot or windy weather (80°F or 12 mph), the contractor must take appropriate curing precautions after the placement of concrete. The use of mechanically compacted low slump concrete (not exceeding 4 inches at the time of placement) is recommended.

Lateral Earth Pressures

The following lateral earth pressures and soil parameters in conjunction with the above recommended bearing value (2000 psf), may be used for design of canopy caissons and retaining walls with free draining compacted backfills. If passive earth pressure and friction are combined to provide required resistance to lateral forces, the value of the passive pressure should be reduced to two-thirds the following recommendations:

Active Earth Pressure with level backfill (P_a)	35 pcf (EFP), drained, yielding
At Rest Pressure (P_0)	55 pcf (EFP), drained, non-yielding (part of building wall)
Passive Earth Pressure (P_p)	250 pcf (EFP), drained, maximum of 2500 psf
Horizontal Coefficient of Friction (μ)	0.30
Unit Soil Weight (γ_t)	120 pcf
Skin Friction Value (caissons)	300 psf/foot of bounding area of caisson

We recommend drainage for retaining walls to be provided in accordance with Plate 2 of this report. Maximum precautions should be taken when placing drainage materials and during backfilling. Retaining walls should be waterproofed in accordance with project architect recommendations. All wall backfills should be properly compacted to at least 90 percent relative compaction.

Seismic Considerations

The site is located approximately 5.90 miles from the San Jacinto fault. The site soils class is D. Moderate to strong ground shaking can be expected at the site and there is a 2 percent probability in 50 years (2475 year return period) that peak ground acceleration will exceed 0.546g. The site soil profile is Class D (stiff soils). The structural engineer should consider City/County local codes, California Building Code (CBC) 2016 seismic data presented in this report (Appendix D), the latest requirements of the Structural Engineers Association of Southern California and any other pertinent data in selecting design parameters.

Expansion Index and Soluble Sulfates

Based on observation and soil classification, the expansion potential of the onsite soils is anticipated to be very low (EI<20).

Results of tests also performed by Cal Land Engineering, Inc. of Brea, California on a select soil sample indicate negligible soluble sulfate exposure (less than 0.1 percent water soluble sulfates by weight) (see Appendix C). Concrete, mix, placement and curing for concrete should comply with ACI guidelines. Based on sulfate test results, there is no restriction on cement type. However we recommend concrete slump not exceeding 4 inches at the time of placement. Ferrous metal pipes should be protected in accordance with recommendations of your structural or corrosion engineer.

Surface Drainage/Groundwater

The surface of the site should be graded to provide positive drainage away from structures and foundations. Drainage should be directed to established swales and then to appropriate drainage structures to minimize the possibility of serious erosion. Surface drainage must be directed and maintained away from the foundations. Water, either natural or by irrigation, should not be permitted to pond or saturate the surface soils.

Pavement Design/Subgrade-Base Compaction

On the basis of laboratory classification, we are of the opinion that the tentative new pavement design may be based on an R-value on the order of 30 (or better) corresponding to near surface soils. Considering this and based on typical traffic indices, the recommended pavement sections are outlined as follows:

Location	TI	Recommended Tentative Pavement Thickness
Heavy Truck/Traffic	6.5	4" asphalt concrete over 8" Class II aggregate base
Concrete Pad Areas	---	8" PCC over 4" Class II aggregate base
Vehicle Drive Area	5.5	3" AC over 7" aggregate base
Parking Area	4.5	3" AC over 4" aggregate base

The upper at least 12 inches of pavement subgrade soils should be recompacted to at least 95 percent relative compaction per maximum dry density determined by ASTM D1557-12. The aggregate base should also be compacted to at least 95 percent relative compaction. All subgrade and base must be firm and unyielding without pumping condition prior to placement of asphalt concrete or PCC pavement. Reinforcement of the concrete pavement (with at least No. 3 bars at 18-inches on-center) and use of 4000 psi concrete should also be a consideration.

Cal/OSHA Classification/Trench Excavations/Backfills

In general Cal/OSHA classification of onsite soils appears to be Type B.

Temporary trench excavations deeper than 5 feet should be shored or sloped at 1:1 or flatter in compliance with Cal/OSHA requirements:

a.) The shoring should be designed by a qualified engineer experienced in the shoring design.

b.) The tops of any temporary unshored excavations should be barricaded to prevent vehicle and storage loads within a 1:1 line projected upward from the bottom of the excavation or a minimum of 5 feet, whichever is greater. If the temporary construction embankments, including shored excavations, are to be maintained during the rainy season, berms are suggested along the tops of the excavations where necessary to prevent runoff from entering the excavation and eroding the slope faces.

c.) The soils exposed in the excavations should be inspected during excavation by the soils engineer so that modifications can be made if variations in the soil conditions occur.

d.) All unshored excavations should be stabilized within 30 days of initial excavation.

Backfills in the utility trenches should be compacted to at least 90 percent relative compaction. Onsite earth materials will be suitable for backfills. Clean sandy materials with sand equivalent value of at least 30 must be utilized for the pipe bedding and shading zone. Placement of the trench backfill in lifts and compaction by mechanical effort should be anticipated.

Foundation Plan Review/Observations and Testing

The recommendations provided in this report are based on preliminary design information and subsurface conditions as interpreted from limited exploratory work. Soil Exploration Co., Inc. should review the foundation plans prior to construction. Our conclusions and recommendations should also be reviewed, verified during grading/construction and revised as necessary.

Soil Exploration Co., Inc. should observe and/or test at the following stages of construction:

- During all overexcavations and grading.
- Following footing excavation and prior to placement of footing materials.
- During wetting of slab subgrade and prior to placement of slab materials.
- During all trench and wall backfills.
- During subgrade and base compaction prior to paving.
- When any unusual conditions are encountered.

Final Compaction Report

A final report of compaction control should be prepared subsequent to the completion of grading. The report should include a summary of work performed, laboratory test results, and the results, locations and elevations of field density tests performed during grading.

Limitation of Investigation

Our investigation was performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable Geotechnical Engineers practicing in this or similar locations. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

The field and laboratory test data are believed representative of the project site; however, soil conditions can vary significantly. As in most projects, conditions revealed during grading may be at variance with preliminary findings. If this condition occurs, the possible variations must be evaluated by the Project Geotechnical Engineer and adjusted as required or alternate design recommended.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractor carry out such recommendations in the field.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations, and we cannot be responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he considers any of the recommended actions presented herein to be unsafe.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In additions, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge.

This report was prepared for the client based on client's needs, directions and requirements at the time. This report is not authorized for use by and is not to be relied upon by any party except the client with whom Soil Exploration Co., Inc. contracted for the work. Use of, or reliance on, this report by any other party is at that party's risk. Unauthorized use of or reliance on this report constitutes an agreement to defend and indemnify Soil Exploration Co., Inc. from and against any liability which may arise as a result of such use or reliance, regardless of any fault, negligence, or strict liability of Soil Exploration Co., Inc.

Closure

If you should have any questions or concerns regarding this report, please do not hesitate to call our office. We appreciate this opportunity to be of service.

Very truly yours,
Soil Exploration Co., Inc.

REGISTERED PROFESSIONAL ENGINEER
GENE KINH-TOAN LUU
C 53417
EXP. 6/30/21
CIVIL
STATE OF CALIFORNIA

Gene K. Luu, PE 53417
Project Engineer

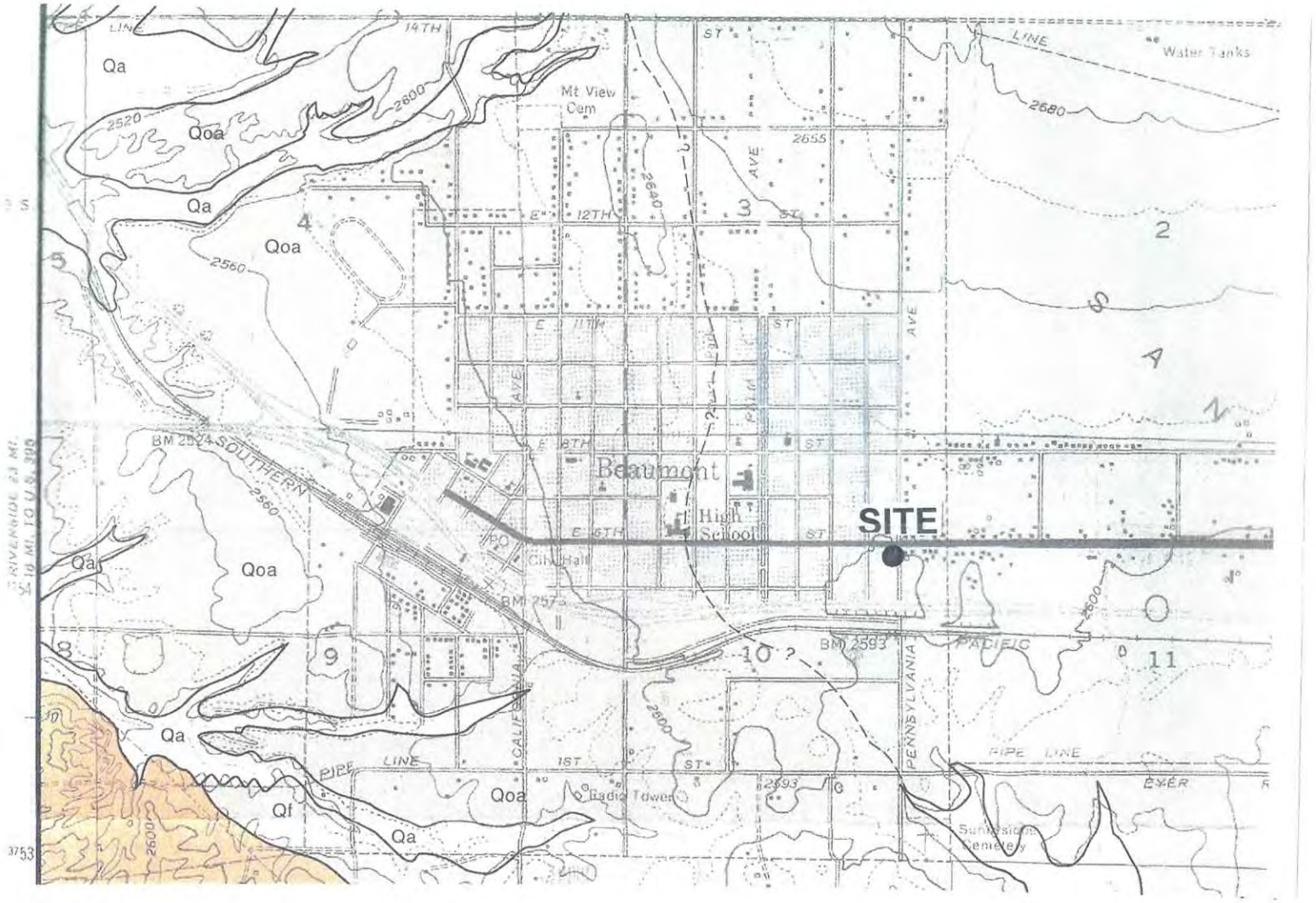
Distribution: [1] Addressee

Attachments:

Figure 1	Site Location Map
Figure 2	Geologic Map
Figure 3	Riverside County GIS Map
Figure 4	U.S. Geological Survey Faults Map
Plate 1	Exploratory Boring and Infiltration Test Location Map
Plate 2	Retaining Wall Backfill and Subdrain Detail
Appendix A	References
Appendix B	Geotechnical Boring Logs
Appendix C	Laboratory Test Results
Appendix D	National Seismic Hazard Maps-Source Parameters and CBC (2016) Seismic Parameters
Appendix E	General Earthwork and Grading Specifications
Appendix F	Infiltration Test Procedure and Test Results

USGS, U.S. Topo, Beaumont Quadrangle, Riverside County, California, 2018.

Figure 1



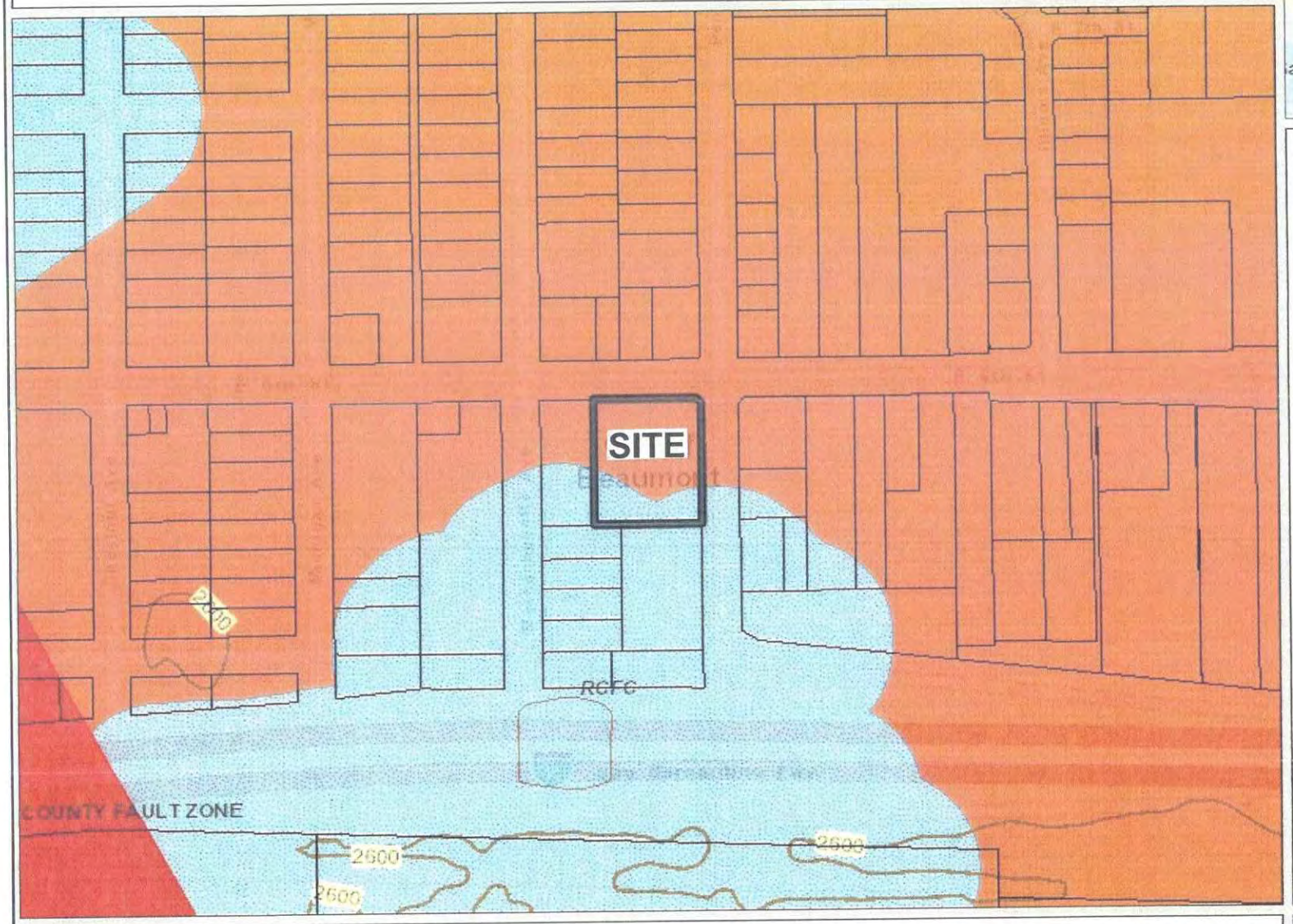
Base Map: Geologic Map of the Beaumont Quadrangle, Riverside County, California, by Thomas W. Dibblee, Jr., 2003.

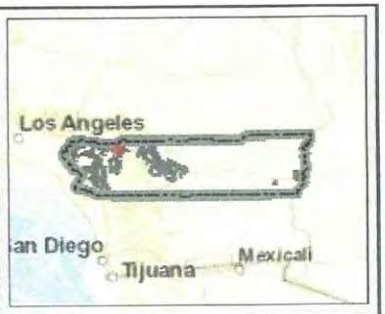
LEGEND:

Qf: Alluvial-fan of San Gorgonio Pass; sand and gravel of plutonic and gneissic detritus derived from rising San Bernardino mountains to the north.

SWC E. 6th Street and Pennsylvania Avenue **City of Beaumont, California**	**Soil Exploration Co., Inc.** **Project No.: 19196-01** **Date: October 30, 2019** **Figure: 2**

Map My County Map





Legend

- Parcels
- Contours 20 ft interval (with 10
  - 20' CONTOUR
  - 100' INDEX CONTOUR
- Faults
  - OTHER AUTHORITY
  - ALQUIST-PRIOLO
  - RIVERSIDE COUNTY
- Fault Zones
  - OTHER FAULT ZONE
  - COUNTY FAULT ZONE
  - ELSINORE FAULT ZONE
  - SAN ANDREAS FAULT ZONE
  - SAN JACINTO FAULT ZONE
- Flood
- Liquefaction
  - Other Susceptibility
  - High
  - Low
  - Moderate
  - Very High
  - Very low
- Blueline Streams
- City Areas
- World Street Map

IMPORTANT Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

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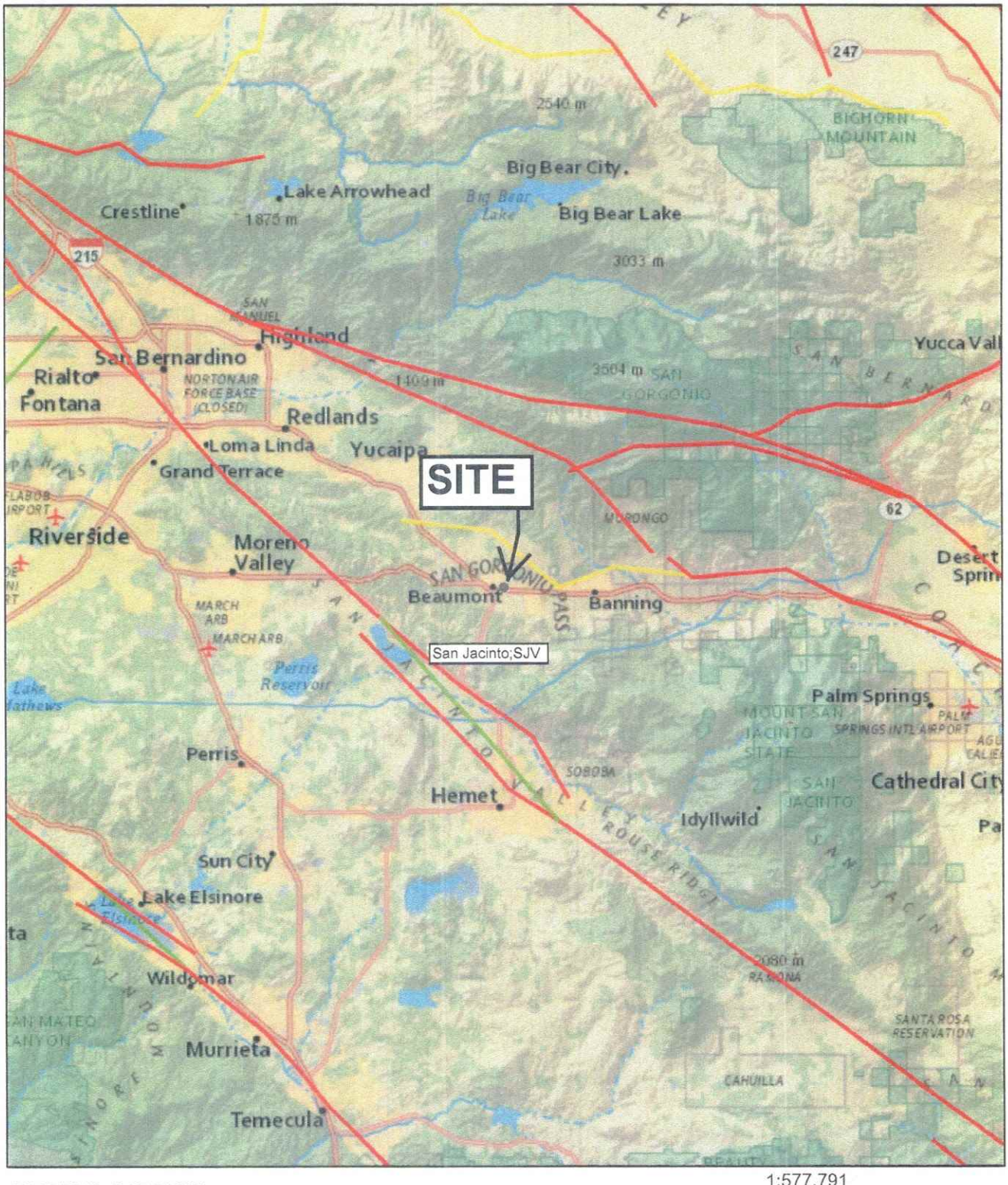
© Riverside County GIS

Notes

APN 418122028

Figure 3

U.S. Geological Survey 2014 Faults



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0 4 8 16 mi

0 5 10 20 km

NSHM 2014 Fault Sources

Normal

Strike Slip

Thrust

Unassigned

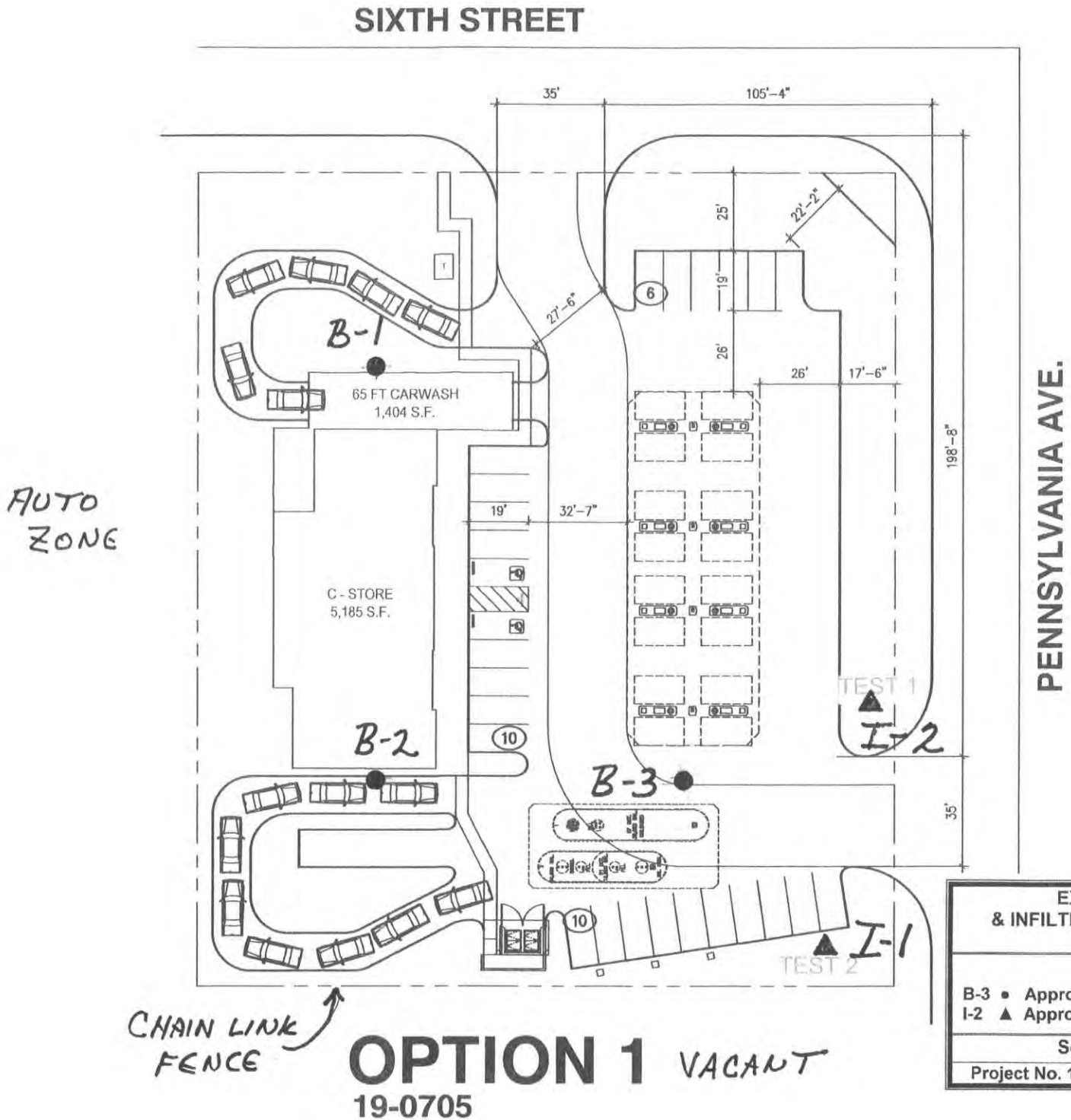
N

USGS, National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Figure 4

USGS

National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp. | USGS |



EXPLORATORY BORING & INFILTRATION TEST LOCATION MAP
PLATE 1

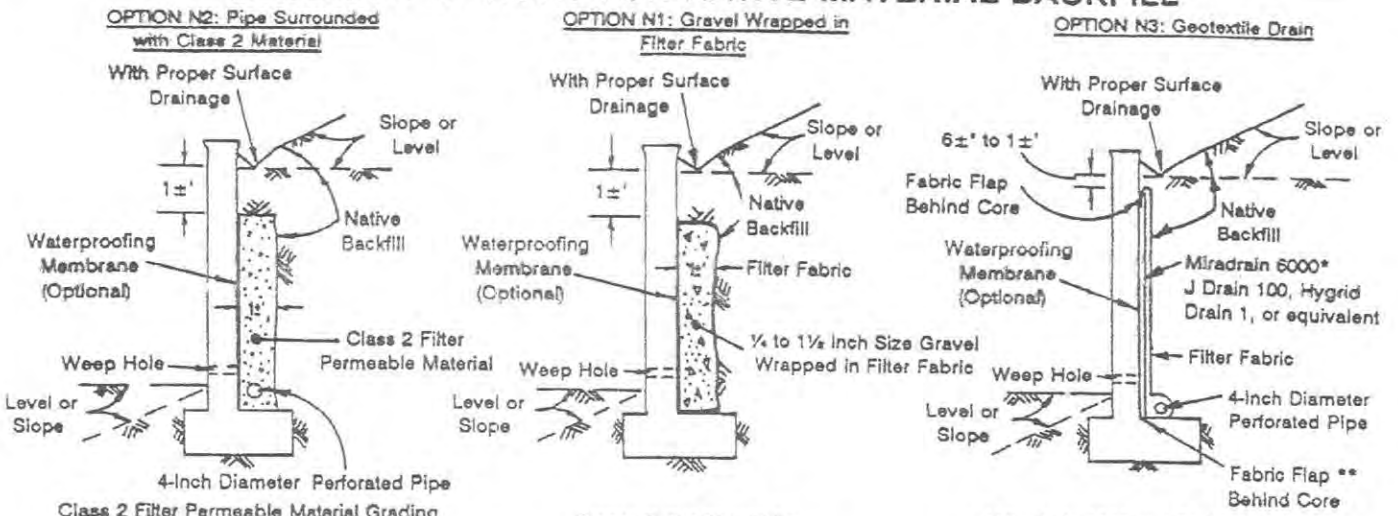
LEGEND

B-3 • Approximate Location of Boring
I-2 ▲ Approximate Location of Infiltration Test

Soil Exploration Co., Inc.

Project No. 19196-01	October 30, 2019

SUBDRAIN OPTIONS FOR NATIVE MATERIAL BACKFILL



Class 2 Filter Permeable Material Grading Per Caltrans Specifications

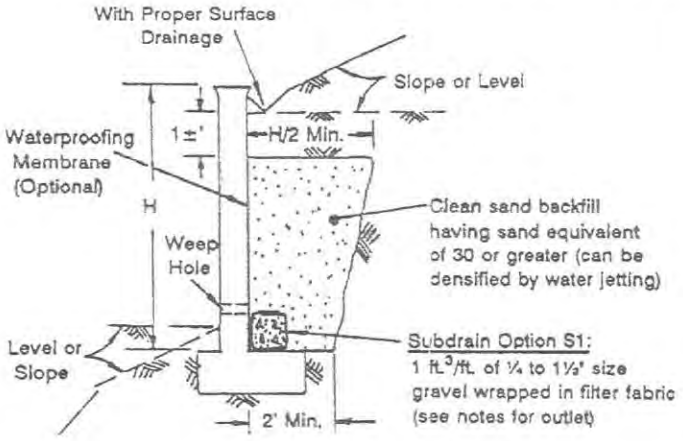
Sieve Size	Percent Passing
1"	100
3/4"	90-100
3/8"	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

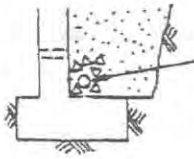
Proper Outlet Should be Provided for Gravel Subdrain (See Notes)

*Miradrain 6000 or J Drain 100 for non-waterproofed walls; Miradrain 6200 or J Drain 200 for completed waterproofed walls

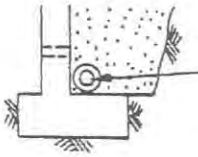
**Peel back the bottom fabric flap, place pipe next to core, wrap fabric around pipe and tuck behind core.

SUBDRAIN OPTIONS FOR CLEAN SAND BACKFILL





Subdrain Option S2:
4" diameter perforated pipe surrounded with 1 ft.³/ft. of Class 2 filter material per Caltrans specifications as above



Subdrain Option S3:
4" diameter perforated pipe wrapped in filter fabric

Notes:

- Pipe type should be ASTM D1527 Acrylonitrile Butediene Styrene (ABS) SDR35 or ASTM D1785 Polyvinyl Chloride plastic (PVC), Schedule 40, Armco A2000 PVC, or approved equivalent. Pipe should be installed with perforations down.
- Filter fabric should be Mirafi 140N, 140NS, Supac 4NP, Amoco 4545, Trevira 1114, or approved equivalent.
- All drains should have a gradient of 1 percent minimum.
- Outlet portion for gravel subdrain should have a 4"-diameter pipe with the perforated portion inserted into the gravel approximately 2' minimum and the nonperforated portion extending approximately 1' outside the gravel. Proper sealing should be provided at the pipe insertion enabling water to run from the gravel portion into rather than outside the pipe.
- Waterproofing membrane may be required for a specific retaining wall such as a stucco or basement wall.
- Weephole should be 2" minimum diameter and provided at 25' minimum in length of wall. If exposure is permitted, weephole should be located at 3±" above finished grade. If exposure is not permitted such as for a wall adjacent to a sidewalk/curb, a pipe under the sidewalk to discharge through the curb face or equivalent should be provided, or for a basement-type wall, a proper subdrain outlet system should be provided. Open vertical masonry joints (i.e., omit mortar from joints of first course above finished grade) at 32" maximum intervals may be substituted for weepholes. Screening such as with a filter fabric should be provided for weepholes/open joints to prevent earth materials from entering the holes/joints.

RETAINING WALL BACKFILL AND SUBDRAIN DETAIL

Soil Exploration Co. Inc.

Plate: 2

APPENDIX A

REFERENCES

- CDMG, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada, Dated February 1998.
- Riverside County GIS Map
- Geologic Map of the Beaumont Quadrangle, Riverside County, California, by Thomas W. Dibblee, Jr., 2003.
- U.S. Geological Survey Faults, 2014.

Riverside County Stormwater Quality Best Management Practice, Design Handbook for Low Impact Development, Riverside County, June 2014.

APPENDIX B

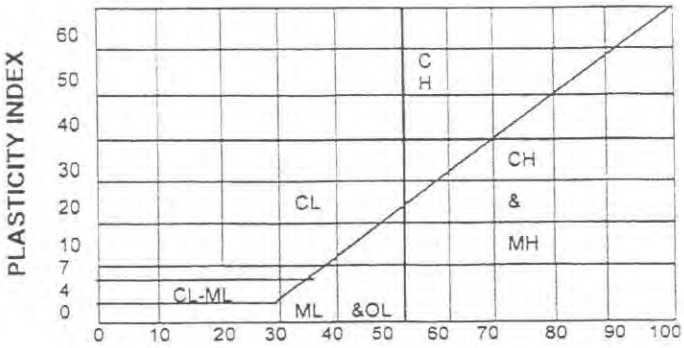
MAJOR DIVISIONS			SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS (More than ½ of soil < No. 200 sieve)	GRAVELS (More than ½ of coarse fraction > No. 4 sieve size)	GW		Well-graded gravels or gravel-sand mixtures, little or no fines
		GP		Poorly graded gravels or gravel-sand mixtures, little or no fines
		GM		Silty gravels, gravel-sand-silt mixtures
		GC		Clayey gravels, gravel-sand-clay mixtures
	SANDS (More than ½ of coarse fraction < No. 4 sieve size)	SW		Well-graded sands or gravely sands, little or no fines
		SP		Poorly graded sands or gravelly sands, little or no fines
		SM		Silty sands, sand-salt mixtures
		SC		Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (More than ½ of soil < No. 200 sieve)	SILTS & CLAYS LL < 50	ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		OL		Organic silts and organic silty clays of low plasticity.
	SILTS & CLAYS LL > 50	MH		Inorganic silts, caceous or diatonaceous fine sandy or silty soils, elastic silts
		CH		Inorganic clays of medium to high plasticity, organic silty clays, organic silts
		OH		Organic clays of medium to high plasticity, organic silty clays, organic silts
	HIGHLY ORGANIC SOILS	Pt		Peat and other highly organic soils

CLASSIFICATION CHART

(UNIFIED SOIL CLASSIFICATION SYSTEM)

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDER	ABOVE 12"	ABOVE 305
COBBLES	3" to 12"	305 to 76.2
GRAVEL	3" to No. 4	762 to 4.76
COARSE	3" TO ¾"	76.2 to 19.1
FINE	¾"to No. 4	19.1 to 4.76
SAND	No. 4 to 200	4.76 to 0.074
COARSE	No. 4 to 10	4.76 to 2.00
MEDIUM	No. 10 to 40	2.00 to 0.420
FINE	No. 40 to 200	0.420 to 0.074
SILT & CLAY	BELOW No. 200	BELOW 0.074

GRAIN SIZE CHART



PLASTICITY CHART

Ring Sample	Bag Sample	NR No Recovery	Classification in accordance with ASTM D2487 Description and visual observation in accordance with ASTM D2488 All Sieve Sizes shown are US Standard SPT Refusal is defined as one of the following: 10 blows for no apparent displacement 50 blows for less than 6 inches advancement 100 blows for 6 to 18 inches advancement
SPT Sample	= Seepage		

GEOTECHNICAL BORING LOGS

Drill Hole No. B-1

Date: October 17, 2019
Drilling Company: Larry Harklerode
Hole Diameter: 8" **Drive Weight:** 140 lbs. **Drop:** 30"

Project No. 19196-01
Type of Rig: B-53
Elevation: Existing Ground

DEPTH (feet)	TYPE OF TEST	SAMPLE TEST	BLOWS PER 6 INCH	DRY DENSITY (%)	MOISTURE (%)	SOIL CLASSIFICATION USCS	GEOTECHNICAL DESCRIPTION LOGGED BY: GL SAMPLED BY: GL
1						SM	**SILTY SAND:** Light brown, fine to medium grianed, dry, dense
2							
3		X	28/44/40	-	8.8		Dry, very dense
4							
5							
6		X	18/21/20	-	10.8		Slightly moist, dense
7							
8							
9							
10							
11		X	49/16/18	-	-		Yellowish/light brown, fine to medium grained, slightly moist, dense
12							
13							
14							
15							
16		X	6/12/18	-	-		Slightly moist, medium dense
17							
18							
19							
20							
21		X	20/20/20	-	-		Slightly moist, dense
22							
23							Slightly moist, dense
24							TOTAL DEPTH = 25 FEET NO GROUNDWATER
25		X	13/14/17	-	-		NO CAVIING BORING BACKFILLED

Soil Exploration Co., Inc.

GEOTECHNICAL BORING LOGS

Drill Hole No. B-2

Date: October 17, 2019
Drilling Company: Larry Harklerode
Hole Diameter: 8" **Drive Weight:** 140 lbs. **Drop:** 30"

Project No. 19196-01
Type of Rig: B-53
Elevation: Existing Ground

DEPTH (feet)	TYPE OF TEST	SAMPLE TEST	BLOWS PER 6 INCH	DRY DENSITY (%)	MOISTURE (%)	SOIL CLASSIFICATION USCS	GEOTECHNICAL DESCRIPTION LOGGED BY: GL SAMPLED BY: GL
1						SM	**SILTY SAND:** Light brown, fine to medium grained, slightly moist, dense
2							
3		■	23/25/30	89.3	8.1		Slightly moist, very dense
4							
5							
6		■	26/32/44	100.9	11.6		Slightly moist, very dense
7							
8							
9							
10							
11		╳	9/6/6	-	-		Slightly moist, medium dense
12							
13							
14							
15							
16		╳	12/12/18	-	-		Slightly moist, medium dense
17							
18							
19							
20							
21		╳	23/24/27	-	-		Slightly moist, very dense
22							TOTAL DEPTH = 21.5 FEET NO GROUNDWATER NO CAVING BORING BACKFILLED
23							
24							
25							

Soil Exploration Co., Inc.

GEOTECHNICAL BORING LOGS

Drill Hole No. B-3

Date: October 17, 2019
Drilling Company: Larry Harklerode
Hole Diameter: 8" **Drive Weight:** 140 lbs. **Drop:** 30"

Project No. 19196-01
Type of Rig: B-53
Elevation: Existing Ground

DEPTH (feet)	TYPE OF TEST	SAMPLE TEST	BLOWS PER 6 INCH	DRY DENSITY (%)	MOISTURE (%)	SOIL CLASSIFICATION USCS	GEOTECHNICAL DESCRIPTION LOGGED BY: GL SAMPLED BY: GL
1						SM	**SILTY SAND:** Light brown, fine to medium grained, dry, dense
2							
3		X	26/28/30	-	6.2		Dry, very dense
4							
5							
6		X	:29/30/34	-	11.0		Dry, very dense
7							
8							
9							
10							
11		X	32/15/20	-	-		Yellowish/light brown, dense
12							
13							
14							
15							
16		X	15/20/26	-	-		Slightly moist, dense
17							
18							
19							TOTAL DEPTH = 16.5 FEET NO GROUNDWATER
20							NO CAVING BORING BACKFILLED
21							
22							
23							
24							
25							

APPENDIX C

Cal Land Engineering, Inc.
dba Quartech Consultants
Geotechnical, Environmental & Civil Engineering

October 23, 2019

Soil Exploration Company Inc.
7535 Jurupa Avenue, Unit C
Riverside, California 92504

Attn: Mr. Gene Luu

RE: LABORATORY TEST RESULTS/REPORT
Client: Beyond Food Mart, Inc.
Project: Sulfate
Project No.: 19196-01
QCI Job No.: 19-183-010e

Gentlemen:

We have completed the testing program conducted on sample for above project. The tests were performed in accordance with testing procedures as follows:

TEST	METHOD
Sulfate	CT- 417

Enclosed is Summary of Laboratory Test Results.

We appreciate the opportunity to provide testing services to Soil Exploration Company, Inc. Should you have any questions, please call the undersigned.

Sincerely yours,
Cal Land Engineering, Inc. (CLE)
dba Quartech Consultants (QCI)

Matthew Au
Project Engineer

Enclosure

576 E. Lambert Road, Brea, CA 92821; Tel: 714-671-1050, Fax: 714-671-1090

Cal Land Engineering, Inc.
dba Quartech Consultants
Geotechnical, Environmental, and Civil Engineering

Soil Exploration Company Inc.
7535 Jurupa Avenue, Suite C
Riverside, California 92504

QCI Project No.: 19-183-010e
Date: October 23, 2019
Summarized by: MA

Client: Beyond Foot Mart, Inc.
Project: Sulfate
Project No.: 19196-01

Sulfate Test Results

Sample ID	Sample Depth (ft)	Sulfate CT-417 % By Weight
B-1	0-5'	0.0020

576 East Lambert Road, Brea, California 92821; Tel: 714-671-1050; Fax: 714-671-1090

APPENDIX D

U.S. Geological Survey - Earthquake Hazards Program

2008 National Seismic Hazard Maps - Source Parameters

New Search

Distance in Miles	Name	State	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)
5.90	San Jacinto;SBV+SJV	CA	n/a	90	V	strike slip	0	16
5.90	San Jacinto;SJV	CA	18	90	V	strike slip	0	16
6.48	San Jacinto;SBV+SJV+A+C	CA	n/a	90	V	strike slip	0	17
6.48	San Jacinto;SBV+SJV+A	CA	n/a	90	V	strike slip	0	16
6.48	San Jacinto;SJV+A+CC+B+SM	CA	n/a	90	V	strike slip	0.1	15
6.48	San Jacinto;SJV+A+CC+B	CA	n/a	90	V	strike slip	0.1	15
6.48	San Jacinto;SJV+A+CC	CA	n/a	90	V	strike slip	0	16
6.48	San Jacinto;SJV+A+C	CA	n/a	90	V	strike slip	0	17
6.48	San Jacinto;SJV+A	CA	n/a	90	V	strike slip	0	17
6.48	San Jacinto;SBV+SJV+A+CC+B+SM	CA	n/a	90	V	strike slip	0.1	15
6.48	San Jacinto;SBV+SJV+A+CC+B	CA	n/a	90	V	strike slip	0.1	15
6.48	San Jacinto;SBV+SJV+A+CC	CA	n/a	90	V	strike slip	0	16
7.73	S. San Andreas;NSB+SSB+BG	CA	n/a	75		strike slip	0	14
7.73	S. San Andreas;NSB+SSB	CA	n/a	90	V	strike slip	0	13
7.73	S. San Andreas;NM+SM+NSB+SSB+BG+CO	CA	n/a	84		strike slip	0.1	13
7.73	S. San Andreas;NM+SM+NSB+SSB+BG	CA	n/a	83		strike slip	0	14
7.73	S. San Andreas;NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	13

7.73	S. San Andreas;BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14
7.73	S. San Andreas;BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	85		strike slip	0.1	13
7.73	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0	14
7.73	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14
7.73	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13
7.73	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	85		strike slip	0	14
7.73	S. San Andreas;CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14
7.73	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13
7.73	S. San Andreas;BB+NM+SM+NSB+SSB+BG	CA	n/a	84		strike slip	0	14
7.73	S. San Andreas;SSB+BG	CA	n/a	71		strike slip	0	13
7.73	S. San Andreas;NSB+SSB+BG+CO	CA	n/a	79		strike slip	0.2	12
7.73	S. San Andreas;SSB+BG+CO	CA	n/a	77		strike slip	0.2	12
7.73	S. San Andreas;SSB	CA	16	90	V	strike slip	0	13
7.73	S. San Andreas;SM+NSB+SSB+BG+CO	CA	n/a	83		strike slip	0.1	13
7.73	S. San Andreas;SM+NSB+SSB+BG	CA	n/a	81		strike slip	0	13
7.73	S. San Andreas;SM+NSB+SSB	CA	n/a	90	V	strike slip	0	13
7.73	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13
7.73	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0.1	13
7.73	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0.1	13
7.74	San Jacinto;A+C	CA	n/a	90	V	strike slip	0	17
7.74	San Jacinto;A	CA	9	90	V	strike slip	0	17

7.74	San Jacinto;A+CC	CA	n/a	90	V	strike slip	0	16
7.74	San Jacinto;A+CC+B	CA	n/a	90	V	strike slip	0.1	15
7.74	San Jacinto;A+CC+B+SM	CA	n/a	90	V	strike slip	0.1	15
9.59	S. San Andreas;BG+CO	CA	n/a	72		strike slip	0.3	12
9.59	S. San Andreas;BG	CA	n/a	58		strike slip	0	13
16.54	Pinto Mtn	CA	2.5	90	V	strike slip	0	16
16.72	San Jacinto;SBV	CA	6	90	V	strike slip	0	16
21.18	S. San Andreas;CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14
21.18	S. San Andreas;SM+NSB	CA	n/a	90	V	strike slip	0	13
21.18	S. San Andreas;NSB	CA	22	90	V	strike slip	0	13
21.18	S. San Andreas;NM+SM+NSB	CA	n/a	90	V	strike slip	0	13
21.18	S. San Andreas;BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14
21.18	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0.1	13
21.18	S. San Andreas;CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14
27.39	Elsinore;W+GI	CA	n/a	81	NE	strike slip	0	14
27.39	Elsinore;GI	CA	5	90	V	strike slip	0	13
27.97	Cleghorn	CA	3	90	V	strike slip	0	16
28.34	Elsinore;GI+T+J	CA	n/a	86	NE	strike slip	0	17
28.34	Elsinore;W+GI+T	CA	n/a	84	NE	strike slip	0	14
28.34	Elsinore;W+GI+T+J	CA	n/a	84	NE	strike slip	0	16
28.34	Elsinore;W+GI+T+J+CM	CA	n/a	84	NE	strike slip	0	16

28.34	Elsinore:GI+T	CA	5	90	V	strike slip	0	14
28.34	Elsinore:GI+T+J+CM	CA	n/a	86	NE	strike slip	0	16
28.42	Elsinore:T+J	CA	n/a	86	NE	strike slip	0	17
28.42	Elsinore:T+J+CM	CA	n/a	85	NE	strike slip	0	16
28.42	Elsinore:T	CA	5	90	V	strike slip	0	14
28.62	Helendale-So Lockhart	CA	0.6	90	V	strike slip	0	13
29.68	North Frontal (East)	CA	0.5	41	S	thrust	0	16
30.10	North Frontal (West)	CA	1	49	S	reverse	0	16
32.33	Cucamonga	CA	5	45	N	thrust	0	8
32.98	Burnt Mtn	CA	0.6	67	W	strike slip	0	16
34.41	Lenwood-Lockhart-Old Woman Springs	CA	0.9	90	V	strike slip	0	13
35.23	Chino, alt 2	CA	1	65	SW	strike slip	0	14
35.34	Landers	CA	0.6	90	V	strike slip	0	15
35.39	Eureka Peak	CA	0.6	90	V	strike slip	0	15
36.55	Elsinore:W	CA	2.5	75	NE	strike slip	0	14
36.67	Chino, alt 1	CA	1	50	SW	strike slip	0	9
39.35	Johnson Valley (No)	CA	0.6	90	V	strike slip	0	16
39.95	San Jacinto:C	CA	14	90	V	strike slip	0	17
39.98	San Jacinto:CC+B+SM	CA	n/a	90	V	strike slip	0.2	14
39.98	San Jacinto:CC	CA	4	90	V	strike slip	0	16
39.98	San Jacinto:CC+B	CA	n/a	90	V	strike slip	0.2	14
40.60	Elsinore:J+CM	CA	3	84	NE	strike slip	0	17

40.60	Elsinore:J	CA	3	84	NE	strike slip	0	19
42.49	S. San Andreas:CO	CA	20	90	V	strike slip	0.6	11
42.78	S. San Andreas:SM	CA	29	90	V	strike slip	0	13
42.78	S. San Andreas:PK+CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0.1	13
42.78	S. San Andreas:NM+SM	CA	n/a	90	V	strike slip	0	14
42.78	S. San Andreas:CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14
42.78	S. San Andreas:BB+NM+SM	CA	n/a	90	V	strike slip	0	14
42.78	S. San Andreas;CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14
43.48	San Jose	CA	0.5	74	NW	strike slip	0	15
45.04	So Emerson-Copper Mtn	CA	0.6	90	V	strike slip	0	14
46.40	Sierra Madre Connected	CA	2	51		reverse	0	14
46.40	Sierra Madre	CA	2	53	N	reverse	0	14
46.75	San Joaquin Hills	CA	0.5	23	SW	thrust	2	13
49.20	Calico-Hidalgo	CA	1.8	90	V	strike slip	0	14

2016 CBC – SEISMIC PARAMETERS		
Site Coordinates	**Latitude**	**Longitude**
	33.9290	**-116.9666**
Mapped Spectral Response Acceleration	S_s = 1.500	S_1 = 0.622
Site Coefficients (Class "D")	F_a = 1.00	F_v = 1.50
Maximum Considered Earthquake (MCE) Spectral Response Acceleration	S_{MS} = 1.500	S_{M1} = 0.932
Design Spectral Response Acceleration Parameters	S_{DS} = 1.000	S_{D1} = 0.622
Seismic Design Category	D	
Peak Ground Acceleration (PGA)	0.546g	

References:

- Earthquake.usgs.gov/research/hazmaps/design
- 2016 California Building Code, California Code of Regulations, Title 24, Part 2, Volume 2 of 2, Section 1613, Earthquake Loads

APPENDIX E

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

1.0 GENERAL INTENT

These specifications present general procedures and requirements for grading and earthwork as shown on the approved grading plans, including preparation of areas to be filled, placement of fill, installations of subdrains, and excavations. The recommendations contained in the geotechnical report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereinafter in the case of conflict. Evaluations performed by the consultant during the course of grading may result in new recommendations which could supersede these specifications or the recommendations of the geotechnical report.

2.0 EARTHWORK OBSERVATIONS AND TESTING

Prior to the commencement of grading, a qualified geotechnical consultant (soils engineer and engineering geologist, and their representatives) shall be employed for the purpose of observing earthwork procedures and testing the fills for conformance with the recommendations of the geotechnical report and these specifications. It will be necessary that the consultant provide adequate testing and observations so that he may determine that the work was accomplished as specified. It shall be the responsibility of the contractor to assist the consultant and keep him apprised of work schedules and changes so that he may schedule his personnel accordingly.

It shall be the sole responsibility of the contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and approved grading plans. If, in the opinion of the consultant, unsatisfactory conditions, such as questionable soil, poor moisture conditions, inadequate compaction, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the consultant will be empowered to reject the work and recommend that construction be stopped until the unsatisfactory conditions are rectified.

Maximum dry density tests used to determine the degree of compaction will be performed in accordance with the American Society of Testing and Materials, test method ASTM D1557-12.

3.0 PREPARATION OF AREAS TO BE FILLED

3.1 Clearing and Grubbing

All brush, vegetation, and debris shall be removed or piled and otherwise disposed of.

3.2 Processing

The existing ground which is determined to be satisfactory for support of fill shall be scarified to a minimum depth of 6 inches. Existing ground which is not satisfactory shall be overexcavated as specified in the following section. Scarification shall continue until the soils are broken down and free of large clay lumps or clods and until the working surface is reasonably uniform and free of uneven features which would inhibit uniform compaction.

3.3 Overexcavation

Soft, dry, spongy, highly fractured or otherwise unsuitable ground, extending to such depth that surface processing cannot adequately improve the condition, shall be overexcavated down to firm ground, approved by the consultant.

3.4 Moisture Conditioning

Overexcavated and processed soils shall be watered, dried-back, blended, and/or mixed, as required to attain a uniform moisture content near optimum.

3.5 Recompaction

Overexcavation and processed soils which have been properly mixed and moisture-conditioned shall be recompacted to a minimum relative compaction of 90 percent.

3.6 *Benching*

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal : vertical), the ground shall be stepped or benched. The lowest bench shall be a minimum of 15 feet wide, shall be at least 2 feet deep, shall expose firm materials, and shall be approved by the consultant. Other benches shall be excavated in firm materials for a minimum width of 4 feet. Ground sloping flatter than 5:1 (horizontal : vertical) shall be benched or otherwise overexcavated when considered necessary by the consultant.

3.7 *Approval*

All areas to receive fill, including processed areas, removal areas and toe-of-fill benches shall be approved by the consultant prior to fill placement.

4.0 FILL MATERIAL

4.1 *General*

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

4.2 *Oversize*

Oversize materials defined as rock, or other irreducible material with maximum dimension greater than 12 inches, shall not be buried or placed in fills, unless the location, materials, and disposal methods are specifically approved by the consultant. Oversize disposal operations shall be such that nesting of oversize material does not occur, and such that the oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 feet vertically of finish grade or within the range of future utilities or underground construction, unless specifically approved by the consultant.

4.3 *Import*

If importing of fill material is required for grading, the import material shall meet the requirements of Section 4.1.

5.0 FILL PLACEMENT and COMPACTION

5.1 *Fill Lifts*

Approved fill material shall be placed in areas prepared to receive fill in near-horizontal layers not exceeding 6 inches in compacted thickness. The consultant may approve thicker lifts if testing indicates the grading procedures are such that adequate compaction is being achieved with lifts of greater thickness. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to attain uniformity of material and moisture in each layer.

5.2 *Fill Moisture*

Fill layers at a moisture content less than optimum shall be watered and mixed, and wet fill layers shall be aerated by scarification or shall be blended with drier material. Moisture conditioning and mixing of fill layers shall continue until the fill material is at a uniform moisture content at or near optimum.

5.3 *Compaction of Fill*

After each layer has been evenly spread, moisture-conditioned, and mixed, it shall be uniformly compacted to not less than 90 percent of maximum dry density. Compaction equipment shall be adequately sized and shall be either specifically designed for soil compaction or of proven reliability, to efficiently achieve the specified degree of compaction.

5.4 *Fill Slopes*

Compacting of slopes shall be accomplished, in addition to normal compacting procedures, by backrolling of slopes with sheepsfoot rollers at frequent increments of 2 to 3 feet in fill elevation gain, or by other methods producing satisfactory results. At the completion of grading, the relative compaction of the slope out to the slope face shall be at least 90 percent.

5.5 *Compaction Testing*

Field-tests to check the fill moisture and degree of compaction will be performed by the consultant. The location and frequency of tests shall be at the consultant's discretion. In general, the tests will be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of embankment.

6.0 SUBDRAIN INSTALLATION

Subdrain systems, if required, shall be installed in approved ground to conform to the approximate alignment and details shown on the plans or herein. The subdrain location or materials shall not be changed or modified without the approval of the consultant. The consultant, however, may recommend and upon approval, direct changes in subdrain line, grade or material. All subdrains should be surveyed for line and grade after installation and sufficient time shall be allowed for the surveys, prior to commencement of filling over the subdrain.

7.0 EXCAVATION

Excavations and cut slopes will be examined during grading. If directed by the consultant, further excavation or overexcavation and refilling of cut areas shall be performed, and/or remedial grading of cut slopes shall be performed. Where fill-over-cut slopes are to be graded, unless otherwise approved, the cut portion of the slope shall be made and approved by the consultant prior to placement of materials for construction of the fill portion of the slope.

8.0 TRENCH BACKFILLS

Trench excavations for utility pipes shall be backfilled under engineering supervision.

After the utility pipe has been laid, the space under and around the pipe shall be backfilled with clean sand or approved granular soil to a depth of at least one foot over the top of the pipe. The sand backfill shall be uniformly jetted into place before the controlled backfill is placed over the sand.

The onsite materials, or other soils approved by the soil engineer, shall be watered and mixed as necessary prior to placement in lifts over the sand backfill.

The controlled backfill shall be compacted to at least 90 percent of the maximum dry density as determined by the ASTM D1557-12 test method.

Field density tests and inspection of the backfill procedures shall be made by the soil engineer during backfilling to see that proper moisture content and uniform compaction is being maintained. The contractor shall provide test holes and exploratory pits as required by the soil engineer to enable sampling and testing.

APPENDIX F

Infiltration Test (Percolation Test Procedure)

The tests were performed in accordance with Riverside County Stormwater Quality Best Management Practice Design Handbook for Low Impact Development, dated June 2014.

Two 8-inch diameter test holes (I-1 and I-2) were drilled at the suggested locations. The soil at the test locations was visually classified as silty sand. To mitigate any possible caving or sloughing of the test holes, a 6-inch diameter perforated pipe was placed in the hole. The bottom of the hole was covered with 2 inches of gravel.

The testing was conducted after presoaking. Two consecutive measurements showed that 6 inches of water seeped away in less than 25 minutes for I-1 and more than 25 minutes for I-2. The tests were therefore run an additional one hour with measurements taken at 10 minute intervals for I-1 and for an additional six hours with measurements taken at 30 minute intervals for I-2. Water level was adjusted to 20 inches above the bottom of the test hole after each measurement. The drop that occurred during the final reading was used for design rate purposes.

Infiltration Test/Tabulated Test Results

Test No.	Depth of Test (feet)	Earth Material	Infiltration Rate (in/hr)
I-1	9	Silty Sand (SM)	5.03
I-2	8	Silty Sand (SM)	0.88

We recommend that a suitable factor of safety should be applied to the rate in design of the system.

INFILTRATION TEST DATA
(Boring Percolation Test Procedure)

Project: BEYOND FOOD MART INC Project No.: 19196-09
Test Hole No.: TH 1 Date Excavated: 10/17/19
Depth of Test Hole: 9 FEET Soil Classification: SM
Diameter: 9" Presoak: YES
Tested By: EL Date: 10-21-19

SANDY SOIL CRITERIA TEST

Trial No.	Time	Time Interval (min)	Initial Water Level (inches)	Final Water Level (inches)	Δ in Water Level (inches)	Greater Than or Equal to 6" (Y/N)
1	1:05:00 1:30:20	25	88	97.75	9.75	Y
2	1:33:09 1:58:09	25	"	97.75	"	Y

Use Normal Sandy (Circle One) Soil Criteria

Trial No.	Start Time	Stop Time	Δt Time Interval (min.)	Do Initial Depth to Water(in.)	Df Final Depth to Water(in.)	ΔD Change in Water Level (in.)	Infiltration Rate (in./hr.)
1	2:00:05	2:10:05	10	88	97.5	9.5	
2	2:12:45	[illegible]	[illegible]	"	97.125	9.125	
3	2:23:01	2:33:01	10	"	96.5	8.5	
4	2:36:47	2:46:47	10	"	96.125	8.125	
5	2:48:40	2:58:40	10	"	95.625	7.625	
6	3:01:00	3:11:00	10	"	"	"	
7	3:11:45	3:21:45	10	"	"	"	5.03
8							
9							
10							
11							
12							

COMMENTS:

Infiltration Rate = $\frac{4 \times 60 \times 7.625}{10(4 + (2 \times (20 - 7.625)))} = 5.03$ in/hr

INFILTRATION TEST DATA
(Boring Percolation Test Procedure)

Project: BEYOND FOOD MART, INC Project No.: 19196-01
Test Hole No.: I2 Date Excavated: 10/17/19
Depth of Test Hole: 8 FEET Soil Classification: SM
Diameter: 8" Presoak: YES
Tested By: [illegible] Date: [illegible]

SANDY SOIL CRITERIA TEST

Trial No.	Time	Time Interval (min)	Initial Water Level (inches)	Final Water Level (inches)	Δ in Water Level (inches)	Greater Than or Equal to 6" (Y/N)
1	10:09 06 10:[illegible] 36	[illegible]	76	212 3/8	3.625	N
2	10:35 01 11:00 01	[illegible]	76	212 3/8	"	N

Use Normal Sandy (Circle One) Soil Criteria

Trial No.	Start Time	Stop Time	Δt Time Interval (min.)	Do Initial Depth to Water(in.)	Df Final Depth to Water(in.)	ΔD Change in Water Level (in.)	Infiltration Rate (in./hr.)
1	11:04:08	11:34:08	30	76	80.375	4.375	
2	11:34:52	12:04:52	30	"	"	"	
3	12:10:15	12:40:15	30	"	"	"	
4	12:43:12	1:13:12	30	"	"	"	
5	1:14:23	1:44:23	"	"	"	"	
6	1:50:34	2:20:34	"	"	"	"	
7	2:23:45	2:53:45	"	"	"	"	
8	2:55:56	3:25:56	"	"	"	"	
9	3:28:08	3:58:08	"	"	"	"	
10	4:00:20	4:30:20	"	"	"	"	
11	4:32:32	5:02:32	"	"	"	"	
12	5:04:44	5:34:44	"	"	"	"	0.88

COMMENTS:

Infiltration Rate = $\frac{4 \times 60 \times 4.375}{30(4+(20+(20-4.375)))} = 0.88$ in/hr

Appendix 4: Historical Site Conditions

N/A

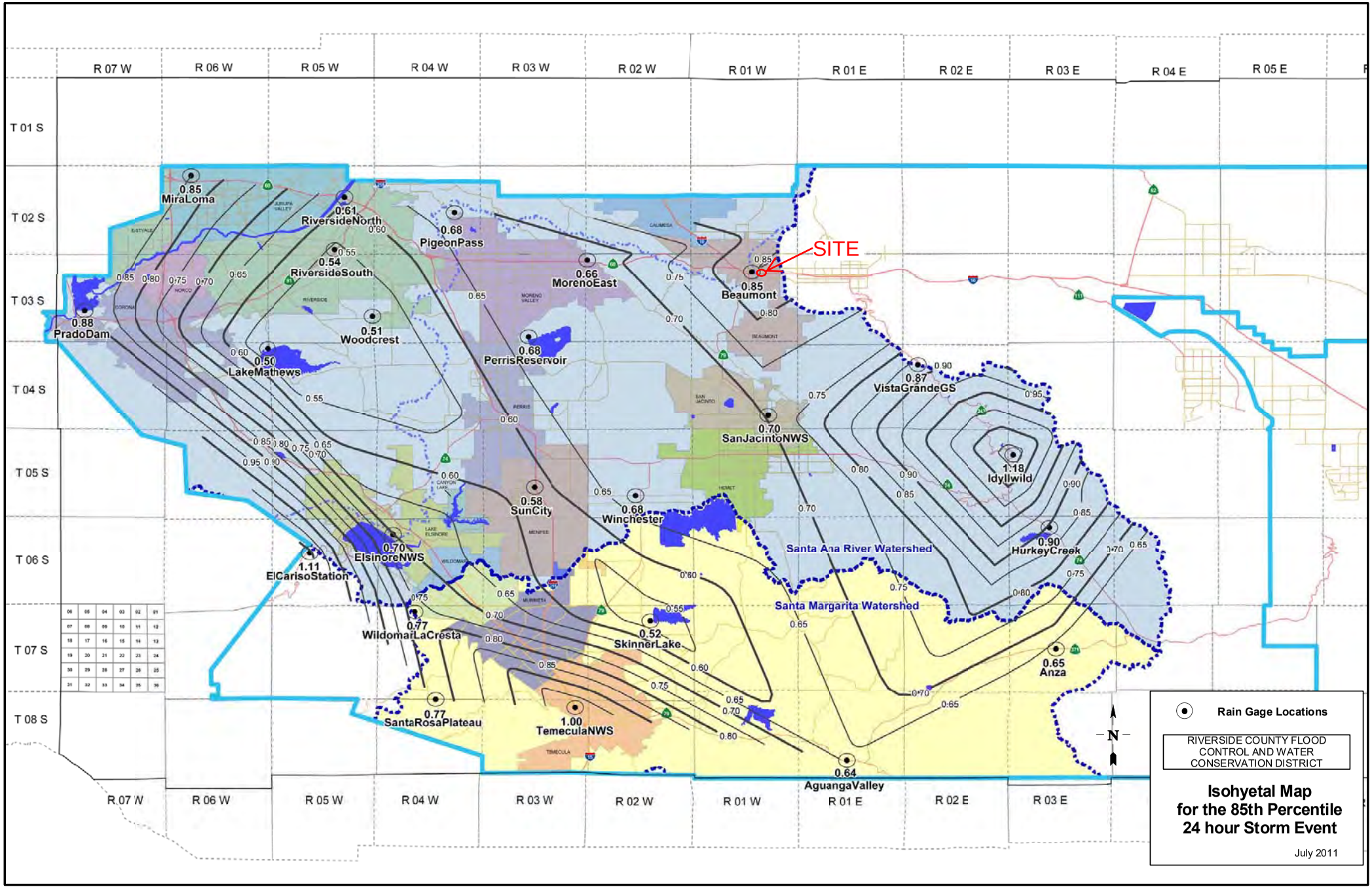
Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

NO ANALYSIS, LIDS ARE FEASIBLE

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation


R 07 W
R 06 W
R 05 W
R 04 W
R 03 W
R 02 W
R 01 W
R 01 E
R 02 E
R 03 E
R 04 E
R 05 E
T 01 S
T 02 S
T 03 S
T 04 S
T 05 S
T 06 S
T 07 S
T 08 S
0.85 MiraLoma
0.61 RiversideNorth
0.68 PigeonPass
0.54 RiversideSouth
0.66 MorenoEast
SITE
0.85 Beaumont
0.88 PradoDam
0.51 Woodcrest
0.68 PerrisReservoir
0.50 LakeMathews
0.87 VistaGrandeGS
0.70 SanJacintoNWS
1.18 Idyllwild
0.58 SunCity
0.68 Winchester
0.90 HurkeyCreek
0.70 ElsinoreNWS
1.11 ElCarisoStation
Santa Ana River Watershed
Santa Margarita Watershed
0.77 WildomarLaCresta
0.52 SkinnerLake
0.65 Anza
0.77 SantaRosaPlateau
1.00 TemeculaNWS
0.64 AguangaValley
N
Rain Gage Locations
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
Isohyetal Map for the 85th Percentile 24 hour Storm Event
July 2011

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Love Engineering	Date	4/10/2020
Designed by	T Love	Case No	
Company Project Number/Name	Beyond Food Mart (Beaumont)		

BMP Identification

BMP NAME / ID: Bioretention Basin #1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.85 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA 1	*6588*	*Roofs*	*1*	*0.89*	*5876.5*			

Bioretention Facility - Design Procedure	BMP ID DMA 1	Legend:	Required Entries / Calculated Cells
Company Name:	Love Engineering	Date:	4/10/2020
Designed by:	TL	County/City Case No.:	

Design Volume

Enter the area tributary to this feature	A_T=	0.15	acres
Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	416	ft^3

Type of Bioretention Facility Design

- ○ Side slopes required (parallel to parking spaces or adjacent to walkways)
- ◉ No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer	d_S =	3.0	ft
Top Width of Bioretention Facility, excluding curb	w_T =	6.5	ft
Total Effective Depth, d_E			
$d_E = [(0.3) \times d_S + (0.4) \times 1] + 0.5$	d_E =	1.80	ft
Minimum Surface Area, A_m $A_M\ (ft^2) = \frac{V_{BMP}\ (ft^3)}{d_E\ (ft)}$	A_M =	232	ft^2
Proposed Surface Area	A=	260	ft^2
Minimum Required Length of Bioretention Facility, L	L =	35.7	ft

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =		:1
Diameter of Underdrain		6	inches
Longitudinal Slope of Site (3% maximum)		0.5	%
6" Check Dam Spacing		0	feet
Describe Vegetation:	Natural Grasses		

Notes:

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Love Engineering	Date	4/10/2020
Designed by	T Love	Case No	
Company Project Number/Name	Beyond Food Mart (Beaumont)		

BMP Identification

BMP NAME / ID: Bioretention Basin #2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth,
from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.85 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA 2	*28110*	*Concrete or Asphalt*	*1*	*0.89*	*25074.1*			

Bioretention Facility - Design Procedure	BMP ID DMA 2	Legend:	Required Entries / Calculated Cells
Company Name:	Love Engineering	Date:	4/10/2020
Designed by:	TL	County/City Case No.:	

Design Volume

Enter the area tributary to this feature	A_T=	0.65	acres
Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	1,776	ft^3

Type of Bioretention Facility Design

- ○ Side slopes required (parallel to parking spaces or adjacent to walkways)
- ◉ No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer	d_S =	3.0	ft
Top Width of Bioretention Facility, excluding curb	w_T =	8.8	ft
Total Effective Depth, d_E			
$d_E = [(0.3) \times d_S + (0.4) \times 1] + 0.5$	d_E =	1.80	ft
Minimum Surface Area, A_m $A_M\ (ft^2) = \frac{V_{BMP}\ (ft^3)}{d_E\ (ft)}$	A_M =	987	ft^2
Proposed Surface Area	A=	997	ft^2
Minimum Required Length of Bioretention Facility, L	L =	112.2	ft

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =		:1
Diameter of Underdrain		8	inches
Longitudinal Slope of Site (3% maximum)		0.5	%
6" Check Dam Spacing		0	feet
Describe Vegetation:	Natural Grasses		

Notes:

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

HYDRAULIC CONDITIONS OF CONCERN:

The 2 year 24 hour storms are attached for the existing condition and developed condition of the site. The flow rate is the same in the existing condition as the developed condition. The volume, however, increases from 3,273 CF to 5,211 CF (1,938 CF). The bioretention basins contain the following volume which will mitigate the Hydraulic Conditions of Concern:

Basin #1
260 SF
Depth: 4' which yields an effective depth of 1.8' (see bioretention calculations in Appendix 6)
Volume Basin 1 = 260 x 1.8 = 468 CF

Basin #2
997 SF
Depth: 4' which yields an effective depth of 1.8' (see bioretention calculations in Appendix 6)
Volume Basin 2 = 997 x 1.8 = 1,795 CF

Total Basin Volume = 468 + 1,795 = 2,263 CF

2,263 CF > 1,938 CF (Hydraulic Conditions of Concern Mitigated)

Rainfall Data (PER NOAA ATLAS 14)

Storm Event	3 HR	6 HR	24 HR
2 Year	0.97"	1.40"	2.73"
100 Year	2.54"	3.38"	6.52"

RESULTS (UNIT HYDROGRAPH METHOD)

Storm Event	Existing Condition	Developed Condition	Difference Storm Flow Dev - Ex	Flood Volume Ex	Flood Volume Developed	Difference Flood Volume Dev - Ex
$Q_{2\ Year\ 24\ Hour}$	0.3 CFS	0.3 CFS	0 CFS	3,273 CF	5,211 CF	1,938 CF

NOAA Atlas 14, Volume 6, Version 2 BEAUMONT
Station ID: 04-0606
Location name: Beaumont, California, USA*
Latitude: 33.9292°, Longitude: -116.975°
Elevation:
Elevation (station metadata): 2613 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.123 (0.103-0.149)	0.162 (0.135-0.197)	0.222 (0.184-0.270)	0.277 (0.228-0.341)	0.365 (0.290-0.464)	0.443 (0.345-0.576)	0.534 (0.405-0.710)	0.639 (0.471-0.876)	0.805 (0.569-1.15)	0.954 (0.651-1.41)
10-min	0.177 (0.147-0.214)	0.233 (0.194-0.282)	0.318 (0.264-0.387)	0.398 (0.327-0.488)	0.523 (0.416-0.665)	0.636 (0.495-0.825)	0.765 (0.581-1.02)	0.916 (0.676-1.25)	1.15 (0.815-1.65)	1.37 (0.932-2.03)
15-min	0.213 (0.178-0.259)	0.281 (0.234-0.341)	0.385 (0.319-0.468)	0.481 (0.396-0.590)	0.633 (0.503-0.804)	0.769 (0.598-0.998)	0.925 (0.702-1.23)	1.11 (0.817-1.52)	1.40 (0.986-1.99)	1.65 (1.13-2.45)
30-min	0.309 (0.257-0.374)	0.407 (0.339-0.494)	0.556 (0.462-0.677)	0.696 (0.572-0.854)	0.916 (0.728-1.16)	1.11 (0.865-1.44)	1.34 (1.01-1.78)	1.60 (1.18-2.19)	2.02 (1.43-2.89)	2.39 (1.63-3.54)
60-min	0.453 (0.377-0.549)	0.596 (0.496-0.724)	0.815 (0.677-0.992)	1.02 (0.839-1.25)	1.34 (1.07-1.71)	1.63 (1.27-2.12)	1.96 (1.49-2.61)	2.35 (1.73-3.22)	2.96 (2.09-4.23)	3.51 (2.39-5.19)
2-hr	0.648 (0.540-0.785)	0.807 (0.672-0.980)	1.05 (0.869-1.27)	1.27 (1.04-1.56)	1.62 (1.28-2.05)	1.92 (1.49-2.49)	2.27 (1.72-3.02)	2.67 (1.97-3.66)	3.30 (2.33-4.72)	3.86 (2.63-5.71)
3-hr	0.792 (0.660-0.960)	0.971 (0.808-1.18)	1.24 (1.03-1.51)	1.48 (1.22-1.82)	1.85 (1.47-2.35)	2.18 (1.70-2.83)	2.54 (1.93-3.39)	2.96 (2.19-4.06)	3.61 (2.55-5.15)	4.17 (2.84-6.17)
6-hr	1.15 (0.961-1.40)	1.40 (1.17-1.70)	1.76 (1.46-2.14)	2.07 (1.71-2.54)	2.54 (2.02-3.23)	2.94 (2.29-3.82)	3.38 (2.57-4.50)	3.87 (2.85-5.30)	4.59 (3.25-6.57)	5.21 (3.56-7.72)
12-hr	1.57 (1.31-1.91)	1.96 (1.63-2.38)	2.48 (2.06-3.02)	2.92 (2.41-3.59)	3.55 (2.82-4.51)	4.05 (3.15-5.26)	4.58 (3.48-6.09)	5.14 (3.79-7.04)	5.93 (4.19-8.48)	6.57 (4.48-9.73)
24-hr	2.11 (1.87-2.43)	2.73 (2.41-3.15)	3.55 (3.13-4.10)	4.21 (3.68-4.91)	5.12 (4.33-6.16)	5.81 (4.82-7.15)	6.52 (5.28-8.21)	7.25 (5.72-9.38)	8.24 (6.24-11.1)	9.01 (6.60-12.6)
2-day	2.56 (2.26-2.95)	3.40 (3.00-3.92)	4.54 (4.00-5.25)	5.50 (4.81-6.41)	6.85 (5.80-8.25)	7.93 (6.58-9.75)	9.05 (7.34-11.4)	10.2 (8.08-13.3)	11.9 (9.03-16.1)	13.3 (9.72-18.5)
3-day	2.78 (2.46-3.20)	3.73 (3.30-4.31)	5.07 (4.47-5.86)	6.23 (5.45-7.26)	7.91 (6.70-9.53)	9.30 (7.72-11.4)	10.8 (8.74-13.6)	12.4 (9.79-16.1)	14.8 (11.2-19.9)	16.7 (12.3-23.3)
4-day	3.02 (2.67-3.48)	4.08 (3.60-4.70)	5.57 (4.91-6.45)	6.87 (6.01-8.02)	8.79 (7.44-10.6)	10.4 (8.61-12.8)	12.1 (9.81-15.2)	14.0 (11.0-18.1)	16.8 (12.7-22.6)	19.1 (14.0-26.6)
7-day	3.50 (3.10-4.04)	4.72 (4.17-5.44)	6.42 (5.66-7.42)	7.89 (6.90-9.20)	10.0 (8.50-12.1)	11.8 (9.79-14.5)	13.7 (11.1-17.2)	15.8 (12.4-20.4)	18.8 (14.2-25.3)	21.3 (15.6-29.6)
10-day	3.85 (3.41-4.44)	5.18 (4.58-5.98)	7.02 (6.19-8.13)	8.61 (7.53-10.0)	10.9 (9.23-13.1)	12.8 (10.6-15.7)	14.8 (12.0-18.6)	16.9 (13.3-21.9)	20.0 (15.2-27.0)	22.6 (16.5-31.4)
20-day	4.82 (4.26-5.55)	6.55 (5.79-7.56)	8.90 (7.84-10.3)	10.9 (9.51-12.7)	13.6 (11.6-16.4)	15.9 (13.2-19.5)	18.2 (14.7-22.9)	20.6 (16.3-26.7)	24.0 (18.2-32.4)	26.8 (19.6-37.3)
30-day	5.67 (5.02-6.53)	7.76 (6.86-8.96)	10.6 (9.31-12.2)	12.9 (11.2-15.0)	16.0 (13.6-19.3)	18.5 (15.4-22.8)	21.1 (17.1-26.5)	23.8 (18.7-30.7)	27.4 (20.8-37.0)	30.3 (22.2-42.3)
45-day	6.84 (6.05-7.88)	9.41 (8.32-10.9)	12.8 (11.2-14.8)	15.5 (13.5-18.0)	19.1 (16.2-23.1)	22.0 (18.2-27.0)	24.8 (20.1-31.2)	27.7 (21.9-35.9)	31.7 (24.0-42.7)	34.7 (25.4-48.4)
60-day	8.00 (7.08-9.22)	11.0 (9.72-12.7)	14.8 (13.1-17.2)	17.9 (15.7-20.9)	22.0 (18.6-26.5)	25.1 (20.8-30.9)	28.2 (22.8-35.5)	31.3 (24.7-40.5)	35.4 (26.8-47.8)	38.6 (28.3-53.8)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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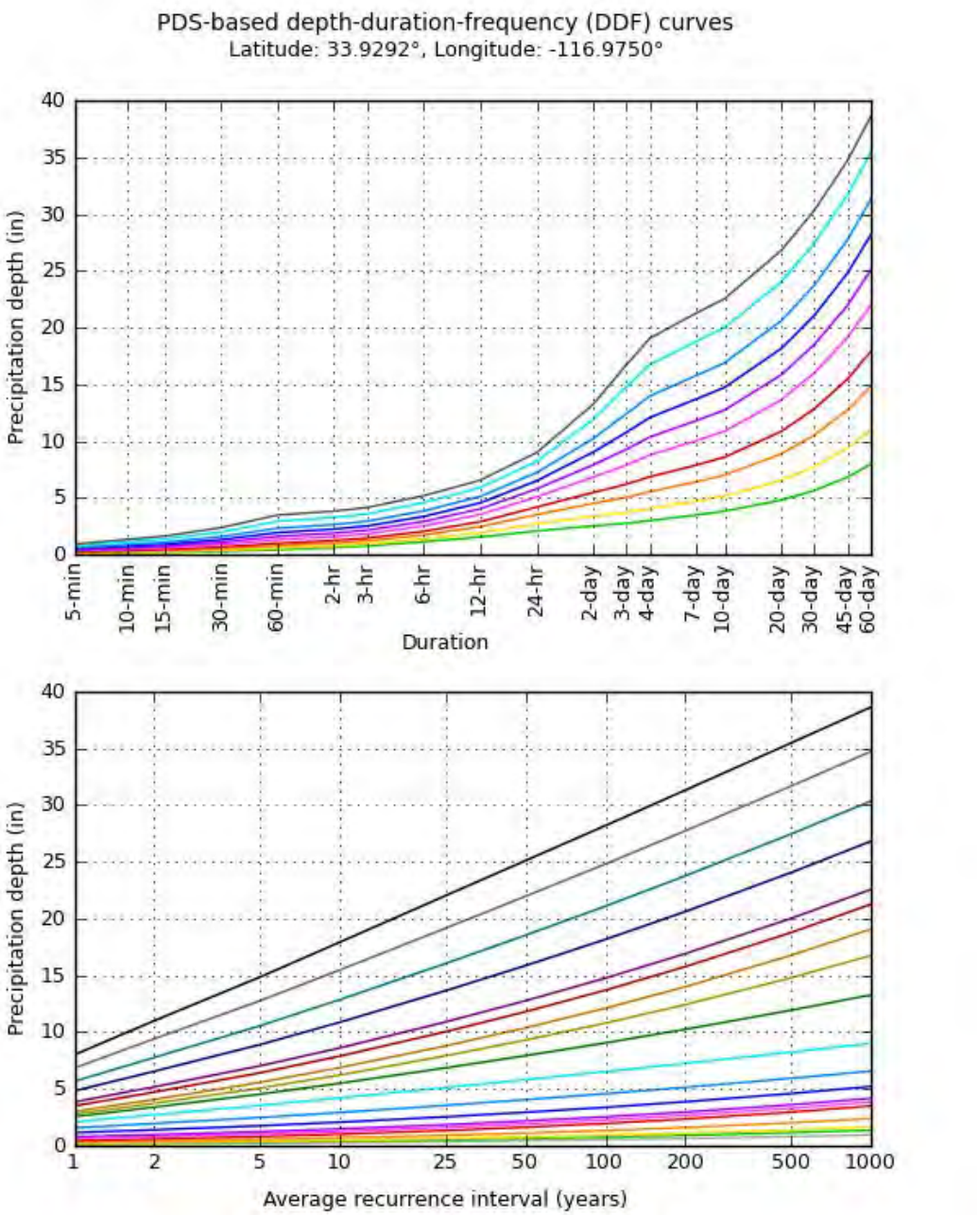
PF graphical



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Mon May 4 22:32:41 2020

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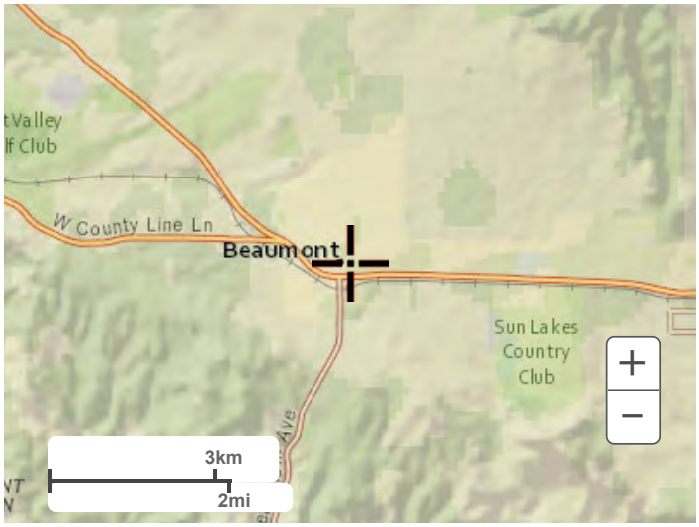
Maps & aerials

Small scale terrain



Large scale terrain

Large scale map

Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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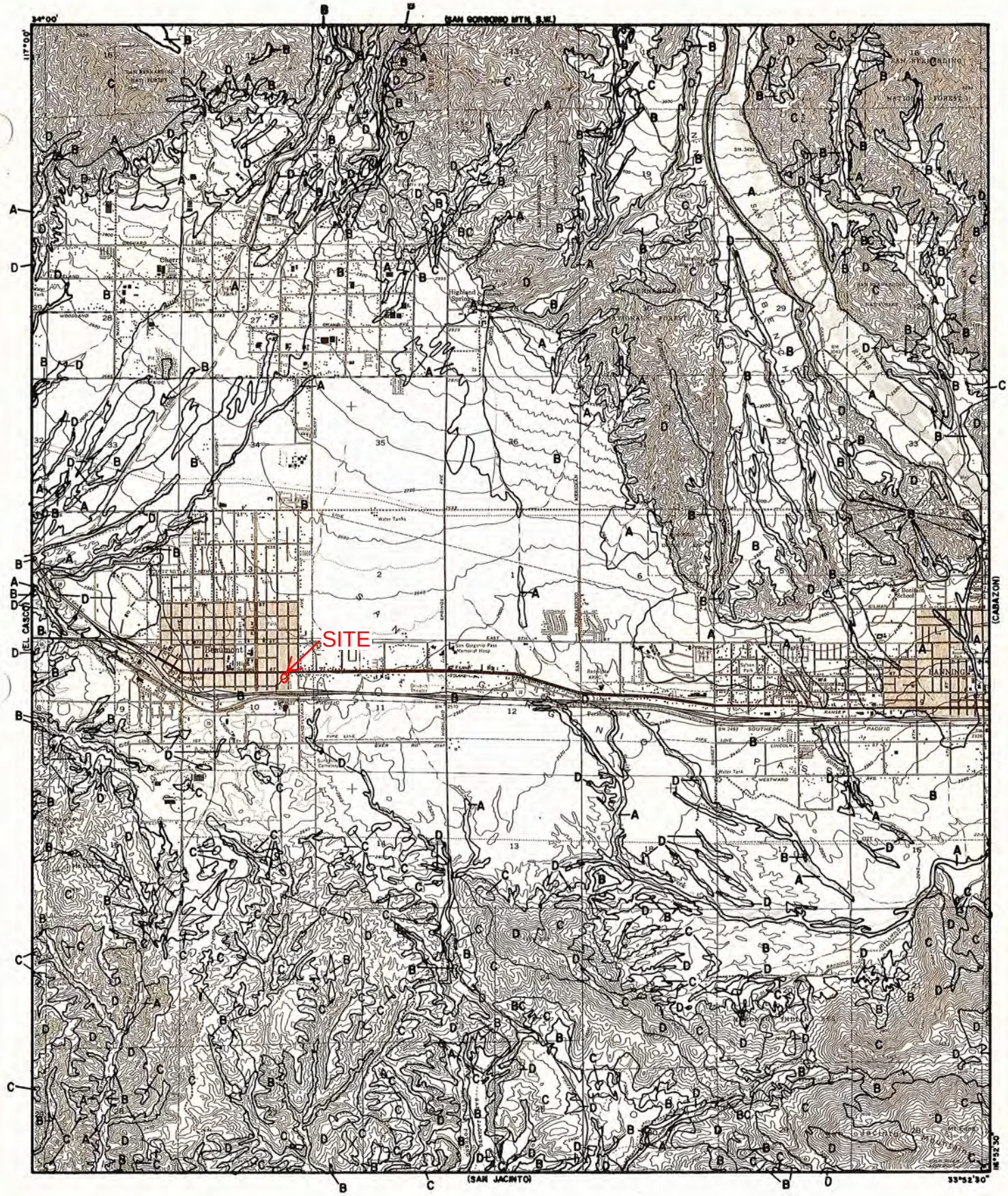

LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC & WCD

HYDROLOGY MANUAL

N

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR BEAUMONT

PLATE C-1.19

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: beaumontex242.out


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

-------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



-------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
2 YEAR, 24 HOUR STORM
EXISTING CONDITION

------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     314.00(Ft.)
Length along longest watercourse measured to centroid =     160.00(Ft.)
Length along longest watercourse =      0.059 Mi.
Length along longest watercourse measured to centroid =      0.030 Mi.
Difference in elevation =       2.90(Ft.)
Slope along watercourse =     48.7643 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time =    0.026 Hr.
Lag time =     1.56 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.62 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.73                  2.76

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           6.52                  6.59

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    2.730(In)
Area Averaged 100-Year Rainfall =    6.520(In)

Point rain (area averaged) =    2.730(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.730(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           86.00         0.180
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.180	0.147	1.000	0.147
					Sum (F) =	0.147

Area averaged mean soil loss (F) (In/Hr) = 0.147
Minimum soil loss rate ((In/Hr)) = 0.074
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	320.782	58.717	0.598
2	0.167	641.564	36.014	0.367
3	0.250	962.346	5.268	0.054
		Sum = 100.000	Sum=	1.018

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.022	0.261	0.020	0.00
2	0.17	0.07	0.022	0.260	0.020	0.00
3	0.25	0.07	0.022	0.259	0.020	0.00
4	0.33	0.10	0.033	0.258	0.029	0.00
5	0.42	0.10	0.033	0.257	0.029	0.00
6	0.50	0.10	0.033	0.256	0.029	0.00
7	0.58	0.10	0.033	0.255	0.029	0.00
8	0.67	0.10	0.033	0.254	0.029	0.00
9	0.75	0.10	0.033	0.253	0.029	0.00
10	0.83	0.13	0.044	0.252	0.039	0.00
11	0.92	0.13	0.044	0.251	0.039	0.00
12	1.00	0.13	0.044	0.250	0.039	0.00
13	1.08	0.10	0.033	0.249	0.029	0.00
14	1.17	0.10	0.033	0.248	0.029	0.00
15	1.25	0.10	0.033	0.247	0.029	0.00
16	1.33	0.10	0.033	0.246	0.029	0.00
17	1.42	0.10	0.033	0.245	0.029	0.00
18	1.50	0.10	0.033	0.244	0.029	0.00
19	1.58	0.10	0.033	0.243	0.029	0.00
20	1.67	0.10	0.033	0.242	0.029	0.00
21	1.75	0.10	0.033	0.241	0.029	0.00
22	1.83	0.13	0.044	0.240	0.039	0.00
23	1.92	0.13	0.044	0.239	0.039	0.00
24	2.00	0.13	0.044	0.238	0.039	0.00
25	2.08	0.13	0.044	0.237	0.039	0.00
26	2.17	0.13	0.044	0.236	0.039	0.00
27	2.25	0.13	0.044	0.235	0.039	0.00
28	2.33	0.13	0.044	0.234	0.039	0.00
29	2.42	0.13	0.044	0.233	0.039	0.00
30	2.50	0.13	0.044	0.232	0.039	0.00
31	2.58	0.17	0.055	0.231	0.049	0.01
32	2.67	0.17	0.055	0.231	0.049	0.01
33	2.75	0.17	0.055	0.230	0.049	0.01
34	2.83	0.17	0.055	0.229	0.049	0.01
35	2.92	0.17	0.055	0.228	0.049	0.01
36	3.00	0.17	0.055	0.227	0.049	0.01
37	3.08	0.17	0.055	0.226	0.049	0.01
38	3.17	0.17	0.055	0.225	0.049	0.01
39	3.25	0.17	0.055	0.224	0.049	0.01
40	3.33	0.17	0.055	0.223	0.049	0.01
41	3.42	0.17	0.055	0.222	0.049	0.01
42	3.50	0.17	0.055	0.221	0.049	0.01

43	3.58	0.17	0.055	0.220	0.049	0.01
44	3.67	0.17	0.055	0.219	0.049	0.01
45	3.75	0.17	0.055	0.218	0.049	0.01
46	3.83	0.20	0.066	0.217	0.059	0.01
47	3.92	0.20	0.066	0.217	0.059	0.01
48	4.00	0.20	0.066	0.216	0.059	0.01
49	4.08	0.20	0.066	0.215	0.059	0.01
50	4.17	0.20	0.066	0.214	0.059	0.01
51	4.25	0.20	0.066	0.213	0.059	0.01
52	4.33	0.23	0.076	0.212	0.069	0.01
53	4.42	0.23	0.076	0.211	0.069	0.01
54	4.50	0.23	0.076	0.210	0.069	0.01
55	4.58	0.23	0.076	0.209	0.069	0.01
56	4.67	0.23	0.076	0.208	0.069	0.01
57	4.75	0.23	0.076	0.207	0.069	0.01
58	4.83	0.27	0.087	0.207	0.079	0.01
59	4.92	0.27	0.087	0.206	0.079	0.01
60	5.00	0.27	0.087	0.205	0.079	0.01
61	5.08	0.20	0.066	0.204	0.059	0.01
62	5.17	0.20	0.066	0.203	0.059	0.01
63	5.25	0.20	0.066	0.202	0.059	0.01
64	5.33	0.23	0.076	0.201	0.069	0.01
65	5.42	0.23	0.076	0.200	0.069	0.01
66	5.50	0.23	0.076	0.199	0.069	0.01
67	5.58	0.27	0.087	0.199	0.079	0.01
68	5.67	0.27	0.087	0.198	0.079	0.01
69	5.75	0.27	0.087	0.197	0.079	0.01
70	5.83	0.27	0.087	0.196	0.079	0.01
71	5.92	0.27	0.087	0.195	0.079	0.01
72	6.00	0.27	0.087	0.194	0.079	0.01
73	6.08	0.30	0.098	0.193	0.088	0.01
74	6.17	0.30	0.098	0.193	0.088	0.01
75	6.25	0.30	0.098	0.192	0.088	0.01
76	6.33	0.30	0.098	0.191	0.088	0.01
77	6.42	0.30	0.098	0.190	0.088	0.01
78	6.50	0.30	0.098	0.189	0.088	0.01
79	6.58	0.33	0.109	0.188	0.098	0.01
80	6.67	0.33	0.109	0.187	0.098	0.01
81	6.75	0.33	0.109	0.187	0.098	0.01
82	6.83	0.33	0.109	0.186	0.098	0.01
83	6.92	0.33	0.109	0.185	0.098	0.01
84	7.00	0.33	0.109	0.184	0.098	0.01
85	7.08	0.33	0.109	0.183	0.098	0.01
86	7.17	0.33	0.109	0.182	0.098	0.01
87	7.25	0.33	0.109	0.182	0.098	0.01
88	7.33	0.37	0.120	0.181	0.108	0.01
89	7.42	0.37	0.120	0.180	0.108	0.01
90	7.50	0.37	0.120	0.179	0.108	0.01
91	7.58	0.40	0.131	0.178	0.118	0.01
92	7.67	0.40	0.131	0.177	0.118	0.01
93	7.75	0.40	0.131	0.177	0.118	0.01
94	7.83	0.43	0.142	0.176	0.128	0.01
95	7.92	0.43	0.142	0.175	0.128	0.01
96	8.00	0.43	0.142	0.174	0.128	0.01
97	8.08	0.50	0.164	0.173	0.147	0.02
98	8.17	0.50	0.164	0.173	0.147	0.02
99	8.25	0.50	0.164	0.172	0.147	0.02
100	8.33	0.50	0.164	0.171	0.147	0.02
101	8.42	0.50	0.164	0.170	0.147	0.02
102	8.50	0.50	0.164	0.169	0.147	0.02
103	8.58	0.53	0.175	0.169	---	0.01
104	8.67	0.53	0.175	0.168	---	0.01
105	8.75	0.53	0.175	0.167	---	0.01
106	8.83	0.57	0.186	0.166	---	0.02
107	8.92	0.57	0.186	0.165	---	0.02
108	9.00	0.57	0.186	0.165	---	0.02
109	9.08	0.63	0.207	0.164	---	0.04
110	9.17	0.63	0.207	0.163	---	0.04
111	9.25	0.63	0.207	0.162	---	0.05
112	9.33	0.67	0.218	0.161	---	0.06
113	9.42	0.67	0.218	0.161	---	0.06

114	9.50	0.67	0.218	0.160	---	0.06
115	9.58	0.70	0.229	0.159	---	0.07
116	9.67	0.70	0.229	0.158	---	0.07
117	9.75	0.70	0.229	0.158	---	0.07
118	9.83	0.73	0.240	0.157	---	0.08
119	9.92	0.73	0.240	0.156	---	0.08
120	10.00	0.73	0.240	0.155	---	0.08
121	10.08	0.50	0.164	0.155	---	0.01
122	10.17	0.50	0.164	0.154	---	0.01
123	10.25	0.50	0.164	0.153	---	0.01
124	10.33	0.50	0.164	0.152	---	0.01
125	10.42	0.50	0.164	0.152	---	0.01
126	10.50	0.50	0.164	0.151	---	0.01
127	10.58	0.67	0.218	0.150	---	0.07
128	10.67	0.67	0.218	0.149	---	0.07
129	10.75	0.67	0.218	0.149	---	0.07
130	10.83	0.67	0.218	0.148	---	0.07
131	10.92	0.67	0.218	0.147	---	0.07
132	11.00	0.67	0.218	0.147	---	0.07
133	11.08	0.63	0.207	0.146	---	0.06
134	11.17	0.63	0.207	0.145	---	0.06
135	11.25	0.63	0.207	0.144	---	0.06
136	11.33	0.63	0.207	0.144	---	0.06
137	11.42	0.63	0.207	0.143	---	0.06
138	11.50	0.63	0.207	0.142	---	0.07
139	11.58	0.57	0.186	0.142	---	0.04
140	11.67	0.57	0.186	0.141	---	0.04
141	11.75	0.57	0.186	0.140	---	0.05
142	11.83	0.60	0.197	0.139	---	0.06
143	11.92	0.60	0.197	0.139	---	0.06
144	12.00	0.60	0.197	0.138	---	0.06
145	12.08	0.83	0.273	0.137	---	0.14
146	12.17	0.83	0.273	0.137	---	0.14
147	12.25	0.83	0.273	0.136	---	0.14
148	12.33	0.87	0.284	0.135	---	0.15
149	12.42	0.87	0.284	0.135	---	0.15
150	12.50	0.87	0.284	0.134	---	0.15
151	12.58	0.93	0.306	0.133	---	0.17
152	12.67	0.93	0.306	0.133	---	0.17
153	12.75	0.93	0.306	0.132	---	0.17
154	12.83	0.97	0.317	0.131	---	0.19
155	12.92	0.97	0.317	0.131	---	0.19
156	13.00	0.97	0.317	0.130	---	0.19
157	13.08	1.13	0.371	0.129	---	0.24
158	13.17	1.13	0.371	0.129	---	0.24
159	13.25	1.13	0.371	0.128	---	0.24
160	13.33	1.13	0.371	0.127	---	0.24
161	13.42	1.13	0.371	0.127	---	0.24
162	13.50	1.13	0.371	0.126	---	0.25
163	13.58	0.77	0.251	0.125	---	0.13
164	13.67	0.77	0.251	0.125	---	0.13
165	13.75	0.77	0.251	0.124	---	0.13
166	13.83	0.77	0.251	0.123	---	0.13
167	13.92	0.77	0.251	0.123	---	0.13
168	14.00	0.77	0.251	0.122	---	0.13
169	14.08	0.90	0.295	0.122	---	0.17
170	14.17	0.90	0.295	0.121	---	0.17
171	14.25	0.90	0.295	0.120	---	0.17
172	14.33	0.87	0.284	0.120	---	0.16
173	14.42	0.87	0.284	0.119	---	0.16
174	14.50	0.87	0.284	0.119	---	0.17
175	14.58	0.87	0.284	0.118	---	0.17
176	14.67	0.87	0.284	0.117	---	0.17
177	14.75	0.87	0.284	0.117	---	0.17
178	14.83	0.83	0.273	0.116	---	0.16
179	14.92	0.83	0.273	0.116	---	0.16
180	15.00	0.83	0.273	0.115	---	0.16
181	15.08	0.80	0.262	0.114	---	0.15
182	15.17	0.80	0.262	0.114	---	0.15
183	15.25	0.80	0.262	0.113	---	0.15
184	15.33	0.77	0.251	0.113	---	0.14

185	15.42	0.77	0.251	0.112	---	0.14
186	15.50	0.77	0.251	0.111	---	0.14
187	15.58	0.63	0.207	0.111	---	0.10
188	15.67	0.63	0.207	0.110	---	0.10
189	15.75	0.63	0.207	0.110	---	0.10
190	15.83	0.63	0.207	0.109	---	0.10
191	15.92	0.63	0.207	0.109	---	0.10
192	16.00	0.63	0.207	0.108	---	0.10
193	16.08	0.13	0.044	0.108	0.039	0.00
194	16.17	0.13	0.044	0.107	0.039	0.00
195	16.25	0.13	0.044	0.106	0.039	0.00
196	16.33	0.13	0.044	0.106	0.039	0.00
197	16.42	0.13	0.044	0.105	0.039	0.00
198	16.50	0.13	0.044	0.105	0.039	0.00
199	16.58	0.10	0.033	0.104	0.029	0.00
200	16.67	0.10	0.033	0.104	0.029	0.00
201	16.75	0.10	0.033	0.103	0.029	0.00
202	16.83	0.10	0.033	0.103	0.029	0.00
203	16.92	0.10	0.033	0.102	0.029	0.00
204	17.00	0.10	0.033	0.102	0.029	0.00
205	17.08	0.17	0.055	0.101	0.049	0.01
206	17.17	0.17	0.055	0.101	0.049	0.01
207	17.25	0.17	0.055	0.100	0.049	0.01
208	17.33	0.17	0.055	0.100	0.049	0.01
209	17.42	0.17	0.055	0.099	0.049	0.01
210	17.50	0.17	0.055	0.099	0.049	0.01
211	17.58	0.17	0.055	0.098	0.049	0.01
212	17.67	0.17	0.055	0.098	0.049	0.01
213	17.75	0.17	0.055	0.097	0.049	0.01
214	17.83	0.13	0.044	0.097	0.039	0.00
215	17.92	0.13	0.044	0.096	0.039	0.00
216	18.00	0.13	0.044	0.096	0.039	0.00
217	18.08	0.13	0.044	0.095	0.039	0.00
218	18.17	0.13	0.044	0.095	0.039	0.00
219	18.25	0.13	0.044	0.094	0.039	0.00
220	18.33	0.13	0.044	0.094	0.039	0.00
221	18.42	0.13	0.044	0.093	0.039	0.00
222	18.50	0.13	0.044	0.093	0.039	0.00
223	18.58	0.10	0.033	0.092	0.029	0.00
224	18.67	0.10	0.033	0.092	0.029	0.00
225	18.75	0.10	0.033	0.092	0.029	0.00
226	18.83	0.07	0.022	0.091	0.020	0.00
227	18.92	0.07	0.022	0.091	0.020	0.00
228	19.00	0.07	0.022	0.090	0.020	0.00
229	19.08	0.10	0.033	0.090	0.029	0.00
230	19.17	0.10	0.033	0.089	0.029	0.00
231	19.25	0.10	0.033	0.089	0.029	0.00
232	19.33	0.13	0.044	0.089	0.039	0.00
233	19.42	0.13	0.044	0.088	0.039	0.00
234	19.50	0.13	0.044	0.088	0.039	0.00
235	19.58	0.10	0.033	0.087	0.029	0.00
236	19.67	0.10	0.033	0.087	0.029	0.00
237	19.75	0.10	0.033	0.087	0.029	0.00
238	19.83	0.07	0.022	0.086	0.020	0.00
239	19.92	0.07	0.022	0.086	0.020	0.00
240	20.00	0.07	0.022	0.085	0.020	0.00
241	20.08	0.10	0.033	0.085	0.029	0.00
242	20.17	0.10	0.033	0.085	0.029	0.00
243	20.25	0.10	0.033	0.084	0.029	0.00
244	20.33	0.10	0.033	0.084	0.029	0.00
245	20.42	0.10	0.033	0.084	0.029	0.00
246	20.50	0.10	0.033	0.083	0.029	0.00
247	20.58	0.10	0.033	0.083	0.029	0.00
248	20.67	0.10	0.033	0.083	0.029	0.00
249	20.75	0.10	0.033	0.082	0.029	0.00
250	20.83	0.07	0.022	0.082	0.020	0.00
251	20.92	0.07	0.022	0.082	0.020	0.00
252	21.00	0.07	0.022	0.081	0.020	0.00
253	21.08	0.10	0.033	0.081	0.029	0.00
254	21.17	0.10	0.033	0.081	0.029	0.00
255	21.25	0.10	0.033	0.080	0.029	0.00

256	21.33	0.07	0.022	0.080	0.020	0.00
257	21.42	0.07	0.022	0.080	0.020	0.00
258	21.50	0.07	0.022	0.079	0.020	0.00
259	21.58	0.10	0.033	0.079	0.029	0.00
260	21.67	0.10	0.033	0.079	0.029	0.00
261	21.75	0.10	0.033	0.079	0.029	0.00
262	21.83	0.07	0.022	0.078	0.020	0.00
263	21.92	0.07	0.022	0.078	0.020	0.00
264	22.00	0.07	0.022	0.078	0.020	0.00
265	22.08	0.10	0.033	0.077	0.029	0.00
266	22.17	0.10	0.033	0.077	0.029	0.00
267	22.25	0.10	0.033	0.077	0.029	0.00
268	22.33	0.07	0.022	0.077	0.020	0.00
269	22.42	0.07	0.022	0.076	0.020	0.00
270	22.50	0.07	0.022	0.076	0.020	0.00
271	22.58	0.07	0.022	0.076	0.020	0.00
272	22.67	0.07	0.022	0.076	0.020	0.00
273	22.75	0.07	0.022	0.076	0.020	0.00
274	22.83	0.07	0.022	0.075	0.020	0.00
275	22.92	0.07	0.022	0.075	0.020	0.00
276	23.00	0.07	0.022	0.075	0.020	0.00
277	23.08	0.07	0.022	0.075	0.020	0.00
278	23.17	0.07	0.022	0.075	0.020	0.00
279	23.25	0.07	0.022	0.075	0.020	0.00
280	23.33	0.07	0.022	0.074	0.020	0.00
281	23.42	0.07	0.022	0.074	0.020	0.00
282	23.50	0.07	0.022	0.074	0.020	0.00
283	23.58	0.07	0.022	0.074	0.020	0.00
284	23.67	0.07	0.022	0.074	0.020	0.00
285	23.75	0.07	0.022	0.074	0.020	0.00
286	23.83	0.07	0.022	0.074	0.020	0.00
287	23.92	0.07	0.022	0.074	0.020	0.00
288	24.00	0.07	0.022	0.074	0.020	0.00
	Sum =	100.0			Sum =	10.7

```
      Flood volume = Effective rainfall      0.89(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      1.84(In)
      Total soil loss =     0.155(Ac.Ft)
      Total rainfall =      2.73(In)
      Flood volume =        3272.5 Cubic Feet
      Total soil loss =        6736.4 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.249(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0000      0.00  Q         |         |         |         |
   0+15       0.0000      0.00  Q         |         |         |         |
   0+20       0.0001      0.00  Q         |         |         |         |
   0+25       0.0001      0.00  Q         |         |         |         |
   0+30       0.0001      0.00  Q         |         |         |         |
   0+35       0.0001      0.00  Q         |         |         |         |
   0+40       0.0002      0.00  Q         |         |         |         |
   0+45       0.0002      0.00  Q         |         |         |         |
   0+50       0.0002      0.00  Q         |         |         |         |
   0+55       0.0002      0.00  Q         |         |         |         |
   1+ 0       0.0003      0.00  Q         |         |         |         |
   1+ 5       0.0003      0.00  Q         |         |         |         |
   1+10       0.0003      0.00  Q         |         |         |         |
   1+15       0.0003      0.00  Q         |         |         |         |
   1+20       0.0004      0.00  Q         |         |         |         |
   1+25       0.0004      0.00  Q         |         |         |         |
   1+30       0.0004      0.00  Q         |         |         |         |
```

1+35	0.0004	0.00	Q	|	|	|	|
1+40	0.0004	0.00	Q	|	|	|	|
1+45	0.0005	0.00	Q	|	|	|	|
1+50	0.0005	0.00	Q	|	|	|	|
1+55	0.0005	0.00	Q	|	|	|	|
2+ 0	0.0006	0.00	Q	|	|	|	|
2+ 5	0.0006	0.00	Q	|	|	|	|
2+10	0.0006	0.00	Q	|	|	|	|
2+15	0.0007	0.00	Q	|	|	|	|
2+20	0.0007	0.00	Q	|	|	|	|
2+25	0.0007	0.00	Q	|	|	|	|
2+30	0.0007	0.00	Q	|	|	|	|
2+35	0.0008	0.01	Q	|	|	|	|
2+40	0.0008	0.01	Q	|	|	|	|
2+45	0.0009	0.01	Q	|	|	|	|
2+50	0.0009	0.01	Q	|	|	|	|
2+55	0.0009	0.01	Q	|	|	|	|
3+ 0	0.0010	0.01	Q	|	|	|	|
3+ 5	0.0010	0.01	Q	|	|	|	|
3+10	0.0010	0.01	Q	|	|	|	|
3+15	0.0011	0.01	Q	|	|	|	|
3+20	0.0011	0.01	Q	|	|	|	|
3+25	0.0012	0.01	Q	|	|	|	|
3+30	0.0012	0.01	Q	|	|	|	|
3+35	0.0012	0.01	Q	|	|	|	|
3+40	0.0013	0.01	Q	|	|	|	|
3+45	0.0013	0.01	Q	|	|	|	|
3+50	0.0014	0.01	Q	|	|	|	|
3+55	0.0014	0.01	Q	|	|	|	|
4+ 0	0.0014	0.01	Q	|	|	|	|
4+ 5	0.0015	0.01	Q	|	|	|	|
4+10	0.0015	0.01	Q	|	|	|	|
4+15	0.0016	0.01	Q	|	|	|	|
4+20	0.0016	0.01	Q	|	|	|	|
4+25	0.0017	0.01	Q	|	|	|	|
4+30	0.0017	0.01	Q	|	|	|	|
4+35	0.0018	0.01	Q	|	|	|	|
4+40	0.0019	0.01	Q	|	|	|	|
4+45	0.0019	0.01	QV	|	|	|	|
4+50	0.0020	0.01	QV	|	|	|	|
4+55	0.0020	0.01	QV	|	|	|	|
5+ 0	0.0021	0.01	QV	|	|	|	|
5+ 5	0.0021	0.01	QV	|	|	|	|
5+10	0.0022	0.01	QV	|	|	|	|
5+15	0.0022	0.01	QV	|	|	|	|
5+20	0.0023	0.01	QV	|	|	|	|
5+25	0.0023	0.01	QV	|	|	|	|
5+30	0.0024	0.01	QV	|	|	|	|
5+35	0.0024	0.01	QV	|	|	|	|
5+40	0.0025	0.01	QV	|	|	|	|
5+45	0.0026	0.01	QV	|	|	|	|
5+50	0.0026	0.01	QV	|	|	|	|
5+55	0.0027	0.01	QV	|	|	|	|
6+ 0	0.0028	0.01	QV	|	|	|	|
6+ 5	0.0028	0.01	QV	|	|	|	|
6+10	0.0029	0.01	QV	|	|	|	|
6+15	0.0030	0.01	QV	|	|	|	|
6+20	0.0030	0.01	QV	|	|	|	|
6+25	0.0031	0.01	QV	|	|	|	|
6+30	0.0032	0.01	QV	|	|	|	|
6+35	0.0032	0.01	QV	|	|	|	|
6+40	0.0033	0.01	QV	|	|	|	|
6+45	0.0034	0.01	QV	|	|	|	|
6+50	0.0035	0.01	QV	|	|	|	|
6+55	0.0035	0.01	QV	|	|	|	|
7+ 0	0.0036	0.01	QV	|	|	|	|
7+ 5	0.0037	0.01	QV	|	|	|	|
7+10	0.0038	0.01	Q V	|	|	|	|
7+15	0.0038	0.01	Q V	|	|	|	|
7+20	0.0039	0.01	Q V	|	|	|	|
7+25	0.0040	0.01	Q V	|	|	|	|

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 7+30       0.0041      0.01  Q V       |         |         |         |
 7+35       0.0042      0.01  Q V       |         |         |         |
 7+40       0.0043      0.01  Q V       |         |         |         |
 7+45       0.0044      0.01  Q V       |         |         |         |
 7+50       0.0045      0.01  Q V       |         |         |         |
 7+55       0.0046      0.01  Q V       |         |         |         |
 8+ 0       0.0047      0.01  Q V       |         |         |         |
 8+ 5       0.0048      0.02  Q V       |         |         |         |
 8+10       0.0049      0.02  Q V       |         |         |         |
 8+15       0.0050      0.02  Q V       |         |         |         |
 8+20       0.0051      0.02  Q V       |         |         |         |
 8+25       0.0052      0.02  Q V       |         |         |         |
 8+30       0.0053      0.02  Q V       |         |         |         |
 8+35       0.0054      0.01  Q V       |         |         |         |
 8+40       0.0055      0.01  Q V       |         |         |         |
 8+45       0.0055      0.01  Q V       |         |         |         |
 8+50       0.0056      0.01  Q V       |         |         |         |
 8+55       0.0058      0.02  Q  V      |         |         |         |
 9+ 0       0.0059      0.02  Q  V      |         |         |         |
 9+ 5       0.0061      0.03  Q  V      |         |         |         |
 9+10       0.0064      0.04  Q  V      |         |         |         |
 9+15       0.0068      0.05  Q  V      |         |         |         |
 9+20       0.0071      0.05  Q  V      |         |         |         |
 9+25       0.0075      0.06  Q   V     |         |         |         |
 9+30       0.0079      0.06  Q   V     |         |         |         |
 9+35       0.0084      0.07  Q   V     |         |         |         |
 9+40       0.0089      0.07  Q   V     |         |         |         |
 9+45       0.0094      0.07  Q   V     |         |         |         |
 9+50       0.0099      0.08  Q    V    |         |         |         |
 9+55       0.0105      0.08  Q    V    |         |         |         |
10+ 0       0.0111      0.09  Q    V    |         |         |         |
10+ 5       0.0114      0.04  Q     V   |         |         |         |
10+10       0.0115      0.01  Q     V   |         |         |         |
10+15       0.0116      0.01  Q     V   |         |         |         |
10+20       0.0116      0.01  Q     V   |         |         |         |
10+25       0.0117      0.01  Q     V   |         |         |         |
10+30       0.0118      0.01  Q     V   |         |         |         |
10+35       0.0121      0.05  Q     V   |         |         |         |
10+40       0.0126      0.07  Q     V   |         |         |         |
10+45       0.0131      0.07  Q     V   |         |         |         |
10+50       0.0136      0.07  Q      V  |         |         |         |
10+55       0.0141      0.07  Q      V  |         |         |         |
11+ 0       0.0146      0.07  Q      V  |         |         |         |
11+ 5       0.0150      0.07  Q      V  |         |         |         |
11+10       0.0155      0.06  Q       V |         |         |         |
11+15       0.0159      0.06  Q       V |         |         |         |
11+20       0.0163      0.06  Q       V |         |         |         |
11+25       0.0168      0.07  Q       V |         |         |         |
11+30       0.0173      0.07  Q        V|         |         |         |
11+35       0.0176      0.05  Q        V|         |         |         |
11+40       0.0179      0.05  Q        V|         |         |         |
11+45       0.0183      0.05  Q        V|         |         |         |
11+50       0.0186      0.05  Q        V|         |         |         |
11+55       0.0190      0.06  Q         V         |         |         |
12+ 0       0.0194      0.06  Q         V         |         |         |
12+ 5       0.0202      0.11  Q         V         |         |         |
12+10       0.0211      0.13  Q         |V        |         |         |
12+15       0.0220      0.14  Q         |V        |         |         |
12+20       0.0231      0.15  Q         | V       |         |         |
12+25       0.0241      0.15  Q         | V       |         |         |
12+30       0.0251      0.15  Q         |  V      |         |         |
12+35       0.0263      0.17  Q         |  V      |         |         |
12+40       0.0275      0.17  Q         |   V     |         |         |
12+45       0.0287      0.18  Q         |    V    |         |         |
12+50       0.0300      0.18  Q         |    V    |         |         |
12+55       0.0313      0.19  Q         |     V   |         |         |
13+ 0       0.0326      0.19  Q         |      V  |         |         |
13+ 5       0.0341      0.22  Q         |       V |         |         |
13+10       0.0358      0.24  Q         |        V|         |         |
13+15       0.0375      0.25  Q         |        V|         |         |
13+20       0.0392      0.25  Q         |         V         |         |
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13+25       0.0409      0.25  Q          |          |V        |          |
13+30       0.0426      0.25  Q          |          | V       |          |
13+35       0.0439      0.18  Q          |          |  V      |          |
13+40       0.0448      0.13  Q          |          |  V      |          |
13+45       0.0457      0.13  Q          |          |   V     |          |
13+50       0.0466      0.13  Q          |          |   V     |          |
13+55       0.0475      0.13  Q          |          |    V    |          |
14+ 0       0.0484      0.13  Q          |          |    V    |          |
14+ 5       0.0495      0.16  Q          |          |     V   |          |
14+10       0.0507      0.17  Q          |          |     V   |          |
14+15       0.0519      0.18  Q          |          |      V  |          |
14+20       0.0531      0.17  Q          |          |       V |          |
14+25       0.0542      0.17  Q          |          |       V |          |
14+30       0.0554      0.17  Q          |          |        V|          |
14+35       0.0566      0.17  Q          |          |         V          |
14+40       0.0577      0.17  Q          |          |         V          |
14+45       0.0589      0.17  Q          |          |         |V         |
14+50       0.0600      0.16  Q          |          |         |V         |
14+55       0.0611      0.16  Q          |          |         | V        |
15+ 0       0.0622      0.16  Q          |          |         |  V       |
15+ 5       0.0633      0.15  Q          |          |         |  V       |
15+10       0.0643      0.15  Q          |          |         |   V      |
15+15       0.0654      0.15  Q          |          |         |   V      |
15+20       0.0664      0.15  Q          |          |         |    V     |
15+25       0.0674      0.14  Q          |          |         |    V     |
15+30       0.0683      0.14  Q          |          |         |     V    |
15+35       0.0691      0.12  Q          |          |         |     V    |
15+40       0.0698      0.10  Q          |          |         |      V   |
15+45       0.0705      0.10  Q          |          |         |      V   |
15+50       0.0712      0.10  Q          |          |         |      V   |
15+55       0.0719      0.10  Q          |          |         |       V  |
16+ 0       0.0726      0.10  Q          |          |         |       V  |
16+ 5       0.0729      0.04  Q          |          |         |       V  |
16+10       0.0730      0.01  Q          |          |         |       V  |
16+15       0.0730      0.00  Q          |          |         |       V  |
16+20       0.0730      0.00  Q          |          |         |       V  |
16+25       0.0731      0.00  Q          |          |         |       V  |
16+30       0.0731      0.00  Q          |          |         |       V  |
16+35       0.0731      0.00  Q          |          |         |       V  |
16+40       0.0731      0.00  Q          |          |         |       V  |
16+45       0.0732      0.00  Q          |          |         |       V  |
16+50       0.0732      0.00  Q          |          |         |       V  |
16+55       0.0732      0.00  Q          |          |         |       V  |
17+ 0       0.0732      0.00  Q          |          |         |       V  |
17+ 5       0.0733      0.00  Q          |          |         |        V|
17+10       0.0733      0.01  Q          |          |         |        V|
17+15       0.0733      0.01  Q          |          |         |        V|
17+20       0.0734      0.01  Q          |          |         |        V|
17+25       0.0734      0.01  Q          |          |         |        V|
17+30       0.0735      0.01  Q          |          |         |        V|
17+35       0.0735      0.01  Q          |          |         |        V|
17+40       0.0735      0.01  Q          |          |         |        V|
17+45       0.0736      0.01  Q          |          |         |        V|
17+50       0.0736      0.00  Q          |          |         |        V|
17+55       0.0736      0.00  Q          |          |         |        V|
18+ 0       0.0737      0.00  Q          |          |         |        V|
18+ 5       0.0737      0.00  Q          |          |         |        V|
18+10       0.0737      0.00  Q          |          |         |        V|
18+15       0.0738      0.00  Q          |          |         |        V|
18+20       0.0738      0.00  Q          |          |         |        V|
18+25       0.0738      0.00  Q          |          |         |        V|
18+30       0.0738      0.00  Q          |          |         |        V|
18+35       0.0739      0.00  Q          |          |         |        V|
18+40       0.0739      0.00  Q          |          |         |        V|
18+45       0.0739      0.00  Q          |          |         |        V|
18+50       0.0739      0.00  Q          |          |         |        V|
18+55       0.0740      0.00  Q          |          |         |        V|
19+ 0       0.0740      0.00  Q          |          |         |        V|
19+ 5       0.0740      0.00  Q          |          |         |        V|
19+10       0.0740      0.00  Q          |          |         |        V|
19+15       0.0740      0.00  Q          |          |         |        V|
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  19+20       0.0741      0.00  Q          |          |          |         V|
  19+25       0.0741      0.00  Q          |          |          |         V|
  19+30       0.0741      0.00  Q          |          |          |         V|
  19+35       0.0742      0.00  Q          |          |          |         V|
  19+40       0.0742      0.00  Q          |          |          |         V|
  19+45       0.0742      0.00  Q          |          |          |         V|
  19+50       0.0742      0.00  Q          |          |          |         V|
  19+55       0.0742      0.00  Q          |          |          |         V|
  20+ 0       0.0742      0.00  Q          |          |          |         V|
  20+ 5       0.0743      0.00  Q          |          |          |         V|
  20+10       0.0743      0.00  Q          |          |          |         V|
  20+15       0.0743      0.00  Q          |          |          |         V|
  20+20       0.0743      0.00  Q          |          |          |         V|
  20+25       0.0744      0.00  Q          |          |          |         V|
  20+30       0.0744      0.00  Q          |          |          |         V|
  20+35       0.0744      0.00  Q          |          |          |         V|
  20+40       0.0744      0.00  Q          |          |          |         V|
  20+45       0.0744      0.00  Q          |          |          |         V|
  20+50       0.0745      0.00  Q          |          |          |         V|
  20+55       0.0745      0.00  Q          |          |          |         V|
  21+ 0       0.0745      0.00  Q          |          |          |         V|
  21+ 5       0.0745      0.00  Q          |          |          |         V|
  21+10       0.0745      0.00  Q          |          |          |         V|
  21+15       0.0746      0.00  Q          |          |          |         V|
  21+20       0.0746      0.00  Q          |          |          |         V|
  21+25       0.0746      0.00  Q          |          |          |         V|
  21+30       0.0746      0.00  Q          |          |          |         V|
  21+35       0.0746      0.00  Q          |          |          |         V|
  21+40       0.0747      0.00  Q          |          |          |         V|
  21+45       0.0747      0.00  Q          |          |          |         V|
  21+50       0.0747      0.00  Q          |          |          |         V|
  21+55       0.0747      0.00  Q          |          |          |         V|
  22+ 0       0.0747      0.00  Q          |          |          |         V|
  22+ 5       0.0747      0.00  Q          |          |          |         V|
  22+10       0.0748      0.00  Q          |          |          |         V|
  22+15       0.0748      0.00  Q          |          |          |         V|
  22+20       0.0748      0.00  Q          |          |          |         V|
  22+25       0.0748      0.00  Q          |          |          |         V|
  22+30       0.0748      0.00  Q          |          |          |         V|
  22+35       0.0749      0.00  Q          |          |          |         V|
  22+40       0.0749      0.00  Q          |          |          |         V|
  22+45       0.0749      0.00  Q          |          |          |         V|
  22+50       0.0749      0.00  Q          |          |          |         V|
  22+55       0.0749      0.00  Q          |          |          |         V|
  23+ 0       0.0749      0.00  Q          |          |          |         V|
  23+ 5       0.0750      0.00  Q          |          |          |         V|
  23+10       0.0750      0.00  Q          |          |          |         V|
  23+15       0.0750      0.00  Q          |          |          |         V|
  23+20       0.0750      0.00  Q          |          |          |         V|
  23+25       0.0750      0.00  Q          |          |          |         V|
  23+30       0.0750      0.00  Q          |          |          |         V|
  23+35       0.0750      0.00  Q          |          |          |         V|
  23+40       0.0751      0.00  Q          |          |          |         V|
  23+45       0.0751      0.00  Q          |          |          |         V|
  23+50       0.0751      0.00  Q          |          |          |         V|
  23+55       0.0751      0.00  Q          |          |          |         V|
  24+ 0       0.0751      0.00  Q          |          |          |         V|
  24+ 5       0.0751      0.00  Q          |          |          |         V|
  24+10       0.0751      0.00  Q          |          |          |         V|
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       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
               Study date  05/04/20 File: BEAUMONTDEV242.out


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----------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4022

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
BEAUMONT BEYOND FOOD MART
2 YEAR,24 HOUR STORM
DEVELOPED CONDITION

-------------------------------------------------------------------
Drainage Area =       1.01(Ac.)  =      0.002 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       1.01(Ac.)  =      0.002 Sq. Mi.
Length along longest watercourse =     525.00(Ft.)
Length along longest watercourse measured to centroid =     345.00(Ft.)
Length along longest watercourse =      0.099 Mi.
Length along longest watercourse measured to centroid =      0.065 Mi.
Difference in elevation =       5.44(Ft.)
Slope along watercourse =     54.7109 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.025 Hr.
Lag time =     1.49 Min.
25% of lag time =     0.37 Min.
40% of lag time =     0.60 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           2.73                  2.76

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        1.01           6.52                  6.59

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    2.730(In)
Area Averaged 100-Year Rainfall =    6.520(In)

Point rain (area averaged) =    2.730(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.730(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     1.010           56.00         0.780
 Total Area Entered =      1.01(Ac.)
```

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	56.0	0.511	0.780	0.152	1.000	0.152
					Sum (F) =	0.152

Area averaged mean soil loss (F) (In/Hr) = 0.152
Minimum soil loss rate ((In/Hr)) = 0.076
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.276

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	335.676	60.069	0.611
2	0.167	671.352	35.248	0.359
3	0.250	1007.028	4.683	0.048
		Sum = 100.000	Sum=	1.018

Storm Event 4 Effective Rainfall = 0.409(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.003	0.270	0.001	0.00
2	0.17	0.07	0.003	0.269	0.001	0.00
3	0.25	0.07	0.003	0.268	0.001	0.00
4	0.33	0.10	0.005	0.267	0.001	0.00
5	0.42	0.10	0.005	0.266	0.001	0.00
6	0.50	0.10	0.005	0.265	0.001	0.00
7	0.58	0.10	0.005	0.264	0.001	0.00
8	0.67	0.10	0.005	0.263	0.001	0.00
9	0.75	0.10	0.005	0.262	0.001	0.00
10	0.83	0.13	0.007	0.261	0.002	0.00
11	0.92	0.13	0.007	0.259	0.002	0.00
12	1.00	0.13	0.007	0.258	0.002	0.00
13	1.08	0.10	0.005	0.257	0.001	0.00
14	1.17	0.10	0.005	0.256	0.001	0.00
15	1.25	0.10	0.005	0.255	0.001	0.00
16	1.33	0.10	0.005	0.254	0.001	0.00
17	1.42	0.10	0.005	0.253	0.001	0.00
18	1.50	0.10	0.005	0.252	0.001	0.00
19	1.58	0.10	0.005	0.251	0.001	0.00
20	1.67	0.10	0.005	0.250	0.001	0.00
21	1.75	0.10	0.005	0.249	0.001	0.00
22	1.83	0.13	0.007	0.248	0.002	0.00
23	1.92	0.13	0.007	0.247	0.002	0.00
24	2.00	0.13	0.007	0.246	0.002	0.00
25	2.08	0.13	0.007	0.245	0.002	0.00
26	2.17	0.13	0.007	0.244	0.002	0.00
27	2.25	0.13	0.007	0.243	0.002	0.00
28	2.33	0.13	0.007	0.242	0.002	0.00
29	2.42	0.13	0.007	0.241	0.002	0.00
30	2.50	0.13	0.007	0.240	0.002	0.00
31	2.58	0.17	0.008	0.239	0.002	0.01
32	2.67	0.17	0.008	0.238	0.002	0.01
33	2.75	0.17	0.008	0.237	0.002	0.01
34	2.83	0.17	0.008	0.236	0.002	0.01
35	2.92	0.17	0.008	0.236	0.002	0.01
36	3.00	0.17	0.008	0.235	0.002	0.01
37	3.08	0.17	0.008	0.234	0.002	0.01
38	3.17	0.17	0.008	0.233	0.002	0.01

39	3.25	0.17	0.008	0.232	0.002	0.01
40	3.33	0.17	0.008	0.231	0.002	0.01
41	3.42	0.17	0.008	0.230	0.002	0.01
42	3.50	0.17	0.008	0.229	0.002	0.01
43	3.58	0.17	0.008	0.228	0.002	0.01
44	3.67	0.17	0.008	0.227	0.002	0.01
45	3.75	0.17	0.008	0.226	0.002	0.01
46	3.83	0.20	0.010	0.225	0.003	0.01
47	3.92	0.20	0.010	0.224	0.003	0.01
48	4.00	0.20	0.010	0.223	0.003	0.01
49	4.08	0.20	0.010	0.222	0.003	0.01
50	4.17	0.20	0.010	0.221	0.003	0.01
51	4.25	0.20	0.010	0.220	0.003	0.01
52	4.33	0.23	0.011	0.219	0.003	0.01
53	4.42	0.23	0.011	0.218	0.003	0.01
54	4.50	0.23	0.011	0.217	0.003	0.01
55	4.58	0.23	0.011	0.216	0.003	0.01
56	4.67	0.23	0.011	0.216	0.003	0.01
57	4.75	0.23	0.011	0.215	0.003	0.01
58	4.83	0.27	0.013	0.214	0.004	0.01
59	4.92	0.27	0.013	0.213	0.004	0.01
60	5.00	0.27	0.013	0.212	0.004	0.01
61	5.08	0.20	0.010	0.211	0.003	0.01
62	5.17	0.20	0.010	0.210	0.003	0.01
63	5.25	0.20	0.010	0.209	0.003	0.01
64	5.33	0.23	0.011	0.208	0.003	0.01
65	5.42	0.23	0.011	0.207	0.003	0.01
66	5.50	0.23	0.011	0.206	0.003	0.01
67	5.58	0.27	0.013	0.205	0.004	0.01
68	5.67	0.27	0.013	0.205	0.004	0.01
69	5.75	0.27	0.013	0.204	0.004	0.01
70	5.83	0.27	0.013	0.203	0.004	0.01
71	5.92	0.27	0.013	0.202	0.004	0.01
72	6.00	0.27	0.013	0.201	0.004	0.01
73	6.08	0.30	0.015	0.200	0.004	0.01
74	6.17	0.30	0.015	0.199	0.004	0.01
75	6.25	0.30	0.015	0.198	0.004	0.01
76	6.33	0.30	0.015	0.197	0.004	0.01
77	6.42	0.30	0.015	0.196	0.004	0.01
78	6.50	0.30	0.015	0.196	0.004	0.01
79	6.58	0.33	0.016	0.195	0.005	0.01
80	6.67	0.33	0.016	0.194	0.005	0.01
81	6.75	0.33	0.016	0.193	0.005	0.01
82	6.83	0.33	0.016	0.192	0.005	0.01
83	6.92	0.33	0.016	0.191	0.005	0.01
84	7.00	0.33	0.016	0.190	0.005	0.01
85	7.08	0.33	0.016	0.190	0.005	0.01
86	7.17	0.33	0.016	0.189	0.005	0.01
87	7.25	0.33	0.016	0.188	0.005	0.01
88	7.33	0.37	0.018	0.187	0.005	0.01
89	7.42	0.37	0.018	0.186	0.005	0.01
90	7.50	0.37	0.018	0.185	0.005	0.01
91	7.58	0.40	0.020	0.184	0.005	0.01
92	7.67	0.40	0.020	0.184	0.005	0.01
93	7.75	0.40	0.020	0.183	0.005	0.01
94	7.83	0.43	0.021	0.182	0.006	0.02
95	7.92	0.43	0.021	0.181	0.006	0.02
96	8.00	0.43	0.021	0.180	0.006	0.02
97	8.08	0.50	0.025	0.179	0.007	0.02
98	8.17	0.50	0.025	0.178	0.007	0.02
99	8.25	0.50	0.025	0.178	0.007	0.02
100	8.33	0.50	0.025	0.177	0.007	0.02
101	8.42	0.50	0.025	0.176	0.007	0.02
102	8.50	0.50	0.025	0.175	0.007	0.02
103	8.58	0.53	0.026	0.174	0.007	0.02
104	8.67	0.53	0.026	0.174	0.007	0.02
105	8.75	0.53	0.026	0.173	0.007	0.02
106	8.83	0.57	0.028	0.172	0.008	0.02
107	8.92	0.57	0.028	0.171	0.008	0.02
108	9.00	0.57	0.028	0.170	0.008	0.02
109	9.08	0.63	0.031	0.169	0.009	0.02

110	9.17	0.63	0.031	0.169	0.009	0.02
111	9.25	0.63	0.031	0.168	0.009	0.02
112	9.33	0.67	0.033	0.167	0.009	0.02
113	9.42	0.67	0.033	0.166	0.009	0.02
114	9.50	0.67	0.033	0.165	0.009	0.02
115	9.58	0.70	0.034	0.165	0.009	0.02
116	9.67	0.70	0.034	0.164	0.009	0.02
117	9.75	0.70	0.034	0.163	0.009	0.02
118	9.83	0.73	0.036	0.162	0.010	0.03
119	9.92	0.73	0.036	0.162	0.010	0.03
120	10.00	0.73	0.036	0.161	0.010	0.03
121	10.08	0.50	0.025	0.160	0.007	0.02
122	10.17	0.50	0.025	0.159	0.007	0.02
123	10.25	0.50	0.025	0.158	0.007	0.02
124	10.33	0.50	0.025	0.158	0.007	0.02
125	10.42	0.50	0.025	0.157	0.007	0.02
126	10.50	0.50	0.025	0.156	0.007	0.02
127	10.58	0.67	0.033	0.155	0.009	0.02
128	10.67	0.67	0.033	0.155	0.009	0.02
129	10.75	0.67	0.033	0.154	0.009	0.02
130	10.83	0.67	0.033	0.153	0.009	0.02
131	10.92	0.67	0.033	0.152	0.009	0.02
132	11.00	0.67	0.033	0.152	0.009	0.02
133	11.08	0.63	0.031	0.151	0.009	0.02
134	11.17	0.63	0.031	0.150	0.009	0.02
135	11.25	0.63	0.031	0.149	0.009	0.02
136	11.33	0.63	0.031	0.149	0.009	0.02
137	11.42	0.63	0.031	0.148	0.009	0.02
138	11.50	0.63	0.031	0.147	0.009	0.02
139	11.58	0.57	0.028	0.146	0.008	0.02
140	11.67	0.57	0.028	0.146	0.008	0.02
141	11.75	0.57	0.028	0.145	0.008	0.02
142	11.83	0.60	0.029	0.144	0.008	0.02
143	11.92	0.60	0.029	0.144	0.008	0.02
144	12.00	0.60	0.029	0.143	0.008	0.02
145	12.08	0.83	0.041	0.142	0.011	0.03
146	12.17	0.83	0.041	0.141	0.011	0.03
147	12.25	0.83	0.041	0.141	0.011	0.03
148	12.33	0.87	0.043	0.140	0.012	0.03
149	12.42	0.87	0.043	0.139	0.012	0.03
150	12.50	0.87	0.043	0.139	0.012	0.03
151	12.58	0.93	0.046	0.138	0.013	0.03
152	12.67	0.93	0.046	0.137	0.013	0.03
153	12.75	0.93	0.046	0.136	0.013	0.03
154	12.83	0.97	0.048	0.136	0.013	0.03
155	12.92	0.97	0.048	0.135	0.013	0.03
156	13.00	0.97	0.048	0.134	0.013	0.03
157	13.08	1.13	0.056	0.134	0.015	0.04
158	13.17	1.13	0.056	0.133	0.015	0.04
159	13.25	1.13	0.056	0.132	0.015	0.04
160	13.33	1.13	0.056	0.132	0.015	0.04
161	13.42	1.13	0.056	0.131	0.015	0.04
162	13.50	1.13	0.056	0.130	0.015	0.04
163	13.58	0.77	0.038	0.130	0.010	0.03
164	13.67	0.77	0.038	0.129	0.010	0.03
165	13.75	0.77	0.038	0.128	0.010	0.03
166	13.83	0.77	0.038	0.128	0.010	0.03
167	13.92	0.77	0.038	0.127	0.010	0.03
168	14.00	0.77	0.038	0.126	0.010	0.03
169	14.08	0.90	0.044	0.126	0.012	0.03
170	14.17	0.90	0.044	0.125	0.012	0.03
171	14.25	0.90	0.044	0.125	0.012	0.03
172	14.33	0.87	0.043	0.124	0.012	0.03
173	14.42	0.87	0.043	0.123	0.012	0.03
174	14.50	0.87	0.043	0.123	0.012	0.03
175	14.58	0.87	0.043	0.122	0.012	0.03
176	14.67	0.87	0.043	0.121	0.012	0.03
177	14.75	0.87	0.043	0.121	0.012	0.03
178	14.83	0.83	0.041	0.120	0.011	0.03
179	14.92	0.83	0.041	0.120	0.011	0.03
180	15.00	0.83	0.041	0.119	0.011	0.03

181	15.08	0.80	0.039	0.118	0.011	0.03
182	15.17	0.80	0.039	0.118	0.011	0.03
183	15.25	0.80	0.039	0.117	0.011	0.03
184	15.33	0.77	0.038	0.116	0.010	0.03
185	15.42	0.77	0.038	0.116	0.010	0.03
186	15.50	0.77	0.038	0.115	0.010	0.03
187	15.58	0.63	0.031	0.115	0.009	0.02
188	15.67	0.63	0.031	0.114	0.009	0.02
189	15.75	0.63	0.031	0.114	0.009	0.02
190	15.83	0.63	0.031	0.113	0.009	0.02
191	15.92	0.63	0.031	0.112	0.009	0.02
192	16.00	0.63	0.031	0.112	0.009	0.02
193	16.08	0.13	0.007	0.111	0.002	0.00
194	16.17	0.13	0.007	0.111	0.002	0.00
195	16.25	0.13	0.007	0.110	0.002	0.00
196	16.33	0.13	0.007	0.110	0.002	0.00
197	16.42	0.13	0.007	0.109	0.002	0.00
198	16.50	0.13	0.007	0.108	0.002	0.00
199	16.58	0.10	0.005	0.108	0.001	0.00
200	16.67	0.10	0.005	0.107	0.001	0.00
201	16.75	0.10	0.005	0.107	0.001	0.00
202	16.83	0.10	0.005	0.106	0.001	0.00
203	16.92	0.10	0.005	0.106	0.001	0.00
204	17.00	0.10	0.005	0.105	0.001	0.00
205	17.08	0.17	0.008	0.105	0.002	0.01
206	17.17	0.17	0.008	0.104	0.002	0.01
207	17.25	0.17	0.008	0.104	0.002	0.01
208	17.33	0.17	0.008	0.103	0.002	0.01
209	17.42	0.17	0.008	0.103	0.002	0.01
210	17.50	0.17	0.008	0.102	0.002	0.01
211	17.58	0.17	0.008	0.102	0.002	0.01
212	17.67	0.17	0.008	0.101	0.002	0.01
213	17.75	0.17	0.008	0.100	0.002	0.01
214	17.83	0.13	0.007	0.100	0.002	0.00
215	17.92	0.13	0.007	0.100	0.002	0.00
216	18.00	0.13	0.007	0.099	0.002	0.00
217	18.08	0.13	0.007	0.099	0.002	0.00
218	18.17	0.13	0.007	0.098	0.002	0.00
219	18.25	0.13	0.007	0.098	0.002	0.00
220	18.33	0.13	0.007	0.097	0.002	0.00
221	18.42	0.13	0.007	0.097	0.002	0.00
222	18.50	0.13	0.007	0.096	0.002	0.00
223	18.58	0.10	0.005	0.096	0.001	0.00
224	18.67	0.10	0.005	0.095	0.001	0.00
225	18.75	0.10	0.005	0.095	0.001	0.00
226	18.83	0.07	0.003	0.094	0.001	0.00
227	18.92	0.07	0.003	0.094	0.001	0.00
228	19.00	0.07	0.003	0.093	0.001	0.00
229	19.08	0.10	0.005	0.093	0.001	0.00
230	19.17	0.10	0.005	0.093	0.001	0.00
231	19.25	0.10	0.005	0.092	0.001	0.00
232	19.33	0.13	0.007	0.092	0.002	0.00
233	19.42	0.13	0.007	0.091	0.002	0.00
234	19.50	0.13	0.007	0.091	0.002	0.00
235	19.58	0.10	0.005	0.090	0.001	0.00
236	19.67	0.10	0.005	0.090	0.001	0.00
237	19.75	0.10	0.005	0.090	0.001	0.00
238	19.83	0.07	0.003	0.089	0.001	0.00
239	19.92	0.07	0.003	0.089	0.001	0.00
240	20.00	0.07	0.003	0.088	0.001	0.00
241	20.08	0.10	0.005	0.088	0.001	0.00
242	20.17	0.10	0.005	0.088	0.001	0.00
243	20.25	0.10	0.005	0.087	0.001	0.00
244	20.33	0.10	0.005	0.087	0.001	0.00
245	20.42	0.10	0.005	0.086	0.001	0.00
246	20.50	0.10	0.005	0.086	0.001	0.00
247	20.58	0.10	0.005	0.086	0.001	0.00
248	20.67	0.10	0.005	0.085	0.001	0.00
249	20.75	0.10	0.005	0.085	0.001	0.00
250	20.83	0.07	0.003	0.085	0.001	0.00
251	20.92	0.07	0.003	0.084	0.001	0.00

252	21.00	0.07	0.003	0.084	0.001	0.00
253	21.08	0.10	0.005	0.084	0.001	0.00
254	21.17	0.10	0.005	0.083	0.001	0.00
255	21.25	0.10	0.005	0.083	0.001	0.00
256	21.33	0.07	0.003	0.083	0.001	0.00
257	21.42	0.07	0.003	0.082	0.001	0.00
258	21.50	0.07	0.003	0.082	0.001	0.00
259	21.58	0.10	0.005	0.082	0.001	0.00
260	21.67	0.10	0.005	0.081	0.001	0.00
261	21.75	0.10	0.005	0.081	0.001	0.00
262	21.83	0.07	0.003	0.081	0.001	0.00
263	21.92	0.07	0.003	0.081	0.001	0.00
264	22.00	0.07	0.003	0.080	0.001	0.00
265	22.08	0.10	0.005	0.080	0.001	0.00
266	22.17	0.10	0.005	0.080	0.001	0.00
267	22.25	0.10	0.005	0.080	0.001	0.00
268	22.33	0.07	0.003	0.079	0.001	0.00
269	22.42	0.07	0.003	0.079	0.001	0.00
270	22.50	0.07	0.003	0.079	0.001	0.00
271	22.58	0.07	0.003	0.079	0.001	0.00
272	22.67	0.07	0.003	0.078	0.001	0.00
273	22.75	0.07	0.003	0.078	0.001	0.00
274	22.83	0.07	0.003	0.078	0.001	0.00
275	22.92	0.07	0.003	0.078	0.001	0.00
276	23.00	0.07	0.003	0.078	0.001	0.00
277	23.08	0.07	0.003	0.077	0.001	0.00
278	23.17	0.07	0.003	0.077	0.001	0.00
279	23.25	0.07	0.003	0.077	0.001	0.00
280	23.33	0.07	0.003	0.077	0.001	0.00
281	23.42	0.07	0.003	0.077	0.001	0.00
282	23.50	0.07	0.003	0.077	0.001	0.00
283	23.58	0.07	0.003	0.077	0.001	0.00
284	23.67	0.07	0.003	0.076	0.001	0.00
285	23.75	0.07	0.003	0.076	0.001	0.00
286	23.83	0.07	0.003	0.076	0.001	0.00
287	23.92	0.07	0.003	0.076	0.001	0.00
288	24.00	0.07	0.003	0.076	0.001	0.00

```
    Sum =     100.0                                    Sum =     3.6
       Flood volume = Effective rainfall      0.30(In)
        times area       1.0(Ac.)/[(In)/(Ft.)] =       0.0(Ac.Ft)
       Total soil loss =      0.11(In)
       Total soil loss =     0.010(Ac.Ft)
       Total rainfall =      0.41(In)
       Flood volume =        1087.0 Cubic Feet
       Total soil loss =         414.4 Cubic Feet
---------------------------------------------------------------------
          Storm Event 3   Effective Rainfall =   0.519(In)
---------------------------------------------------------------------
```

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max |	Low	Effective (In/Hr)
1 0.08	0.07	0.004	0.270	0.001	0.00
2 0.17	0.07	0.004	0.269	0.001	0.00
3 0.25	0.07	0.004	0.268	0.001	0.00
4 0.33	0.10	0.006	0.267	0.002	0.00
5 0.42	0.10	0.006	0.266	0.002	0.00
6 0.50	0.10	0.006	0.265	0.002	0.00
7 0.58	0.10	0.006	0.264	0.002	0.00
8 0.67	0.10	0.006	0.263	0.002	0.00
9 0.75	0.10	0.006	0.262	0.002	0.00
10 0.83	0.13	0.008	0.261	0.002	0.01
11 0.92	0.13	0.008	0.259	0.002	0.01
12 1.00	0.13	0.008	0.258	0.002	0.01
13 1.08	0.10	0.006	0.257	0.002	0.00
14 1.17	0.10	0.006	0.256	0.002	0.00
15 1.25	0.10	0.006	0.255	0.002	0.00
16 1.33	0.10	0.006	0.254	0.002	0.00
17 1.42	0.10	0.006	0.253	0.002	0.00
18 1.50	0.10	0.006	0.252	0.002	0.00
19 1.58	0.10	0.006	0.251	0.002	0.00
20 1.67	0.10	0.006	0.250	0.002	0.00

21	1.75	0.10	0.006	0.249	0.002	0.00
22	1.83	0.13	0.008	0.248	0.002	0.01
23	1.92	0.13	0.008	0.247	0.002	0.01
24	2.00	0.13	0.008	0.246	0.002	0.01
25	2.08	0.13	0.008	0.245	0.002	0.01
26	2.17	0.13	0.008	0.244	0.002	0.01
27	2.25	0.13	0.008	0.243	0.002	0.01
28	2.33	0.13	0.008	0.242	0.002	0.01
29	2.42	0.13	0.008	0.241	0.002	0.01
30	2.50	0.13	0.008	0.240	0.002	0.01
31	2.58	0.17	0.010	0.239	0.003	0.01
32	2.67	0.17	0.010	0.238	0.003	0.01
33	2.75	0.17	0.010	0.237	0.003	0.01
34	2.83	0.17	0.010	0.236	0.003	0.01
35	2.92	0.17	0.010	0.236	0.003	0.01
36	3.00	0.17	0.010	0.235	0.003	0.01
37	3.08	0.17	0.010	0.234	0.003	0.01
38	3.17	0.17	0.010	0.233	0.003	0.01
39	3.25	0.17	0.010	0.232	0.003	0.01
40	3.33	0.17	0.010	0.231	0.003	0.01
41	3.42	0.17	0.010	0.230	0.003	0.01
42	3.50	0.17	0.010	0.229	0.003	0.01
43	3.58	0.17	0.010	0.228	0.003	0.01
44	3.67	0.17	0.010	0.227	0.003	0.01
45	3.75	0.17	0.010	0.226	0.003	0.01
46	3.83	0.20	0.012	0.225	0.003	0.01
47	3.92	0.20	0.012	0.224	0.003	0.01
48	4.00	0.20	0.012	0.223	0.003	0.01
49	4.08	0.20	0.012	0.222	0.003	0.01
50	4.17	0.20	0.012	0.221	0.003	0.01
51	4.25	0.20	0.012	0.220	0.003	0.01
52	4.33	0.23	0.015	0.219	0.004	0.01
53	4.42	0.23	0.015	0.218	0.004	0.01
54	4.50	0.23	0.015	0.217	0.004	0.01
55	4.58	0.23	0.015	0.216	0.004	0.01
56	4.67	0.23	0.015	0.216	0.004	0.01
57	4.75	0.23	0.015	0.215	0.004	0.01
58	4.83	0.27	0.017	0.214	0.005	0.01
59	4.92	0.27	0.017	0.213	0.005	0.01
60	5.00	0.27	0.017	0.212	0.005	0.01
61	5.08	0.20	0.012	0.211	0.003	0.01
62	5.17	0.20	0.012	0.210	0.003	0.01
63	5.25	0.20	0.012	0.209	0.003	0.01
64	5.33	0.23	0.015	0.208	0.004	0.01
65	5.42	0.23	0.015	0.207	0.004	0.01
66	5.50	0.23	0.015	0.206	0.004	0.01
67	5.58	0.27	0.017	0.205	0.005	0.01
68	5.67	0.27	0.017	0.205	0.005	0.01
69	5.75	0.27	0.017	0.204	0.005	0.01
70	5.83	0.27	0.017	0.203	0.005	0.01
71	5.92	0.27	0.017	0.202	0.005	0.01
72	6.00	0.27	0.017	0.201	0.005	0.01
73	6.08	0.30	0.019	0.200	0.005	0.01
74	6.17	0.30	0.019	0.199	0.005	0.01
75	6.25	0.30	0.019	0.198	0.005	0.01
76	6.33	0.30	0.019	0.197	0.005	0.01
77	6.42	0.30	0.019	0.196	0.005	0.01
78	6.50	0.30	0.019	0.196	0.005	0.01
79	6.58	0.33	0.021	0.195	0.006	0.02
80	6.67	0.33	0.021	0.194	0.006	0.02
81	6.75	0.33	0.021	0.193	0.006	0.02
82	6.83	0.33	0.021	0.192	0.006	0.02
83	6.92	0.33	0.021	0.191	0.006	0.02
84	7.00	0.33	0.021	0.190	0.006	0.02
85	7.08	0.33	0.021	0.190	0.006	0.02
86	7.17	0.33	0.021	0.189	0.006	0.02
87	7.25	0.33	0.021	0.188	0.006	0.02
88	7.33	0.37	0.023	0.187	0.006	0.02
89	7.42	0.37	0.023	0.186	0.006	0.02
90	7.50	0.37	0.023	0.185	0.006	0.02
91	7.58	0.40	0.025	0.184	0.007	0.02

92	7.67	0.40	0.025	0.184	0.007	0.02
93	7.75	0.40	0.025	0.183	0.007	0.02
94	7.83	0.43	0.027	0.182	0.007	0.02
95	7.92	0.43	0.027	0.181	0.007	0.02
96	8.00	0.43	0.027	0.180	0.007	0.02
97	8.08	0.50	0.031	0.179	0.009	0.02
98	8.17	0.50	0.031	0.178	0.009	0.02
99	8.25	0.50	0.031	0.178	0.009	0.02
100	8.33	0.50	0.031	0.177	0.009	0.02
101	8.42	0.50	0.031	0.176	0.009	0.02
102	8.50	0.50	0.031	0.175	0.009	0.02
103	8.58	0.53	0.033	0.174	0.009	0.02
104	8.67	0.53	0.033	0.174	0.009	0.02
105	8.75	0.53	0.033	0.173	0.009	0.02
106	8.83	0.57	0.035	0.172	0.010	0.03
107	8.92	0.57	0.035	0.171	0.010	0.03
108	9.00	0.57	0.035	0.170	0.010	0.03
109	9.08	0.63	0.039	0.169	0.011	0.03
110	9.17	0.63	0.039	0.169	0.011	0.03
111	9.25	0.63	0.039	0.168	0.011	0.03
112	9.33	0.67	0.041	0.167	0.011	0.03
113	9.42	0.67	0.041	0.166	0.011	0.03
114	9.50	0.67	0.041	0.165	0.011	0.03
115	9.58	0.70	0.044	0.165	0.012	0.03
116	9.67	0.70	0.044	0.164	0.012	0.03
117	9.75	0.70	0.044	0.163	0.012	0.03
118	9.83	0.73	0.046	0.162	0.013	0.03
119	9.92	0.73	0.046	0.162	0.013	0.03
120	10.00	0.73	0.046	0.161	0.013	0.03
121	10.08	0.50	0.031	0.160	0.009	0.02
122	10.17	0.50	0.031	0.159	0.009	0.02
123	10.25	0.50	0.031	0.158	0.009	0.02
124	10.33	0.50	0.031	0.158	0.009	0.02
125	10.42	0.50	0.031	0.157	0.009	0.02
126	10.50	0.50	0.031	0.156	0.009	0.02
127	10.58	0.67	0.041	0.155	0.011	0.03
128	10.67	0.67	0.041	0.155	0.011	0.03
129	10.75	0.67	0.041	0.154	0.011	0.03
130	10.83	0.67	0.041	0.153	0.011	0.03
131	10.92	0.67	0.041	0.152	0.011	0.03
132	11.00	0.67	0.041	0.152	0.011	0.03
133	11.08	0.63	0.039	0.151	0.011	0.03
134	11.17	0.63	0.039	0.150	0.011	0.03
135	11.25	0.63	0.039	0.149	0.011	0.03
136	11.33	0.63	0.039	0.149	0.011	0.03
137	11.42	0.63	0.039	0.148	0.011	0.03
138	11.50	0.63	0.039	0.147	0.011	0.03
139	11.58	0.57	0.035	0.146	0.010	0.03
140	11.67	0.57	0.035	0.146	0.010	0.03
141	11.75	0.57	0.035	0.145	0.010	0.03
142	11.83	0.60	0.037	0.144	0.010	0.03
143	11.92	0.60	0.037	0.144	0.010	0.03
144	12.00	0.60	0.037	0.143	0.010	0.03
145	12.08	0.83	0.052	0.142	0.014	0.04
146	12.17	0.83	0.052	0.141	0.014	0.04
147	12.25	0.83	0.052	0.141	0.014	0.04
148	12.33	0.87	0.054	0.140	0.015	0.04
149	12.42	0.87	0.054	0.139	0.015	0.04
150	12.50	0.87	0.054	0.139	0.015	0.04
151	12.58	0.93	0.058	0.138	0.016	0.04
152	12.67	0.93	0.058	0.137	0.016	0.04
153	12.75	0.93	0.058	0.136	0.016	0.04
154	12.83	0.97	0.060	0.136	0.017	0.04
155	12.92	0.97	0.060	0.135	0.017	0.04
156	13.00	0.97	0.060	0.134	0.017	0.04
157	13.08	1.13	0.071	0.134	0.019	0.05
158	13.17	1.13	0.071	0.133	0.019	0.05
159	13.25	1.13	0.071	0.132	0.019	0.05
160	13.33	1.13	0.071	0.132	0.019	0.05
161	13.42	1.13	0.071	0.131	0.019	0.05
162	13.50	1.13	0.071	0.130	0.019	0.05

163	13.58	0.77	0.048	0.130	0.013	0.03
164	13.67	0.77	0.048	0.129	0.013	0.03
165	13.75	0.77	0.048	0.128	0.013	0.03
166	13.83	0.77	0.048	0.128	0.013	0.03
167	13.92	0.77	0.048	0.127	0.013	0.03
168	14.00	0.77	0.048	0.126	0.013	0.03
169	14.08	0.90	0.056	0.126	0.015	0.04
170	14.17	0.90	0.056	0.125	0.015	0.04
171	14.25	0.90	0.056	0.125	0.015	0.04
172	14.33	0.87	0.054	0.124	0.015	0.04
173	14.42	0.87	0.054	0.123	0.015	0.04
174	14.50	0.87	0.054	0.123	0.015	0.04
175	14.58	0.87	0.054	0.122	0.015	0.04
176	14.67	0.87	0.054	0.121	0.015	0.04
177	14.75	0.87	0.054	0.121	0.015	0.04
178	14.83	0.83	0.052	0.120	0.014	0.04
179	14.92	0.83	0.052	0.120	0.014	0.04
180	15.00	0.83	0.052	0.119	0.014	0.04
181	15.08	0.80	0.050	0.118	0.014	0.04
182	15.17	0.80	0.050	0.118	0.014	0.04
183	15.25	0.80	0.050	0.117	0.014	0.04
184	15.33	0.77	0.048	0.116	0.013	0.03
185	15.42	0.77	0.048	0.116	0.013	0.03
186	15.50	0.77	0.048	0.115	0.013	0.03
187	15.58	0.63	0.039	0.115	0.011	0.03
188	15.67	0.63	0.039	0.114	0.011	0.03
189	15.75	0.63	0.039	0.114	0.011	0.03
190	15.83	0.63	0.039	0.113	0.011	0.03
191	15.92	0.63	0.039	0.112	0.011	0.03
192	16.00	0.63	0.039	0.112	0.011	0.03
193	16.08	0.13	0.008	0.111	0.002	0.01
194	16.17	0.13	0.008	0.111	0.002	0.01
195	16.25	0.13	0.008	0.110	0.002	0.01
196	16.33	0.13	0.008	0.110	0.002	0.01
197	16.42	0.13	0.008	0.109	0.002	0.01
198	16.50	0.13	0.008	0.108	0.002	0.01
199	16.58	0.10	0.006	0.108	0.002	0.00
200	16.67	0.10	0.006	0.107	0.002	0.00
201	16.75	0.10	0.006	0.107	0.002	0.00
202	16.83	0.10	0.006	0.106	0.002	0.00
203	16.92	0.10	0.006	0.106	0.002	0.00
204	17.00	0.10	0.006	0.105	0.002	0.00
205	17.08	0.17	0.010	0.105	0.003	0.01
206	17.17	0.17	0.010	0.104	0.003	0.01
207	17.25	0.17	0.010	0.104	0.003	0.01
208	17.33	0.17	0.010	0.103	0.003	0.01
209	17.42	0.17	0.010	0.103	0.003	0.01
210	17.50	0.17	0.010	0.102	0.003	0.01
211	17.58	0.17	0.010	0.102	0.003	0.01
212	17.67	0.17	0.010	0.101	0.003	0.01
213	17.75	0.17	0.010	0.100	0.003	0.01
214	17.83	0.13	0.008	0.100	0.002	0.01
215	17.92	0.13	0.008	0.100	0.002	0.01
216	18.00	0.13	0.008	0.099	0.002	0.01
217	18.08	0.13	0.008	0.099	0.002	0.01
218	18.17	0.13	0.008	0.098	0.002	0.01
219	18.25	0.13	0.008	0.098	0.002	0.01
220	18.33	0.13	0.008	0.097	0.002	0.01
221	18.42	0.13	0.008	0.097	0.002	0.01
222	18.50	0.13	0.008	0.096	0.002	0.01
223	18.58	0.10	0.006	0.096	0.002	0.00
224	18.67	0.10	0.006	0.095	0.002	0.00
225	18.75	0.10	0.006	0.095	0.002	0.00
226	18.83	0.07	0.004	0.094	0.001	0.00
227	18.92	0.07	0.004	0.094	0.001	0.00
228	19.00	0.07	0.004	0.093	0.001	0.00
229	19.08	0.10	0.006	0.093	0.002	0.00
230	19.17	0.10	0.006	0.093	0.002	0.00
231	19.25	0.10	0.006	0.092	0.002	0.00
232	19.33	0.13	0.008	0.092	0.002	0.01
233	19.42	0.13	0.008	0.091	0.002	0.01

234	19.50	0.13	0.008	0.091	0.002	0.01
235	19.58	0.10	0.006	0.090	0.002	0.00
236	19.67	0.10	0.006	0.090	0.002	0.00
237	19.75	0.10	0.006	0.090	0.002	0.00
238	19.83	0.07	0.004	0.089	0.001	0.00
239	19.92	0.07	0.004	0.089	0.001	0.00
240	20.00	0.07	0.004	0.088	0.001	0.00
241	20.08	0.10	0.006	0.088	0.002	0.00
242	20.17	0.10	0.006	0.088	0.002	0.00
243	20.25	0.10	0.006	0.087	0.002	0.00
244	20.33	0.10	0.006	0.087	0.002	0.00
245	20.42	0.10	0.006	0.086	0.002	0.00
246	20.50	0.10	0.006	0.086	0.002	0.00
247	20.58	0.10	0.006	0.086	0.002	0.00
248	20.67	0.10	0.006	0.085	0.002	0.00
249	20.75	0.10	0.006	0.085	0.002	0.00
250	20.83	0.07	0.004	0.085	0.001	0.00
251	20.92	0.07	0.004	0.084	0.001	0.00
252	21.00	0.07	0.004	0.084	0.001	0.00
253	21.08	0.10	0.006	0.084	0.002	0.00
254	21.17	0.10	0.006	0.083	0.002	0.00
255	21.25	0.10	0.006	0.083	0.002	0.00
256	21.33	0.07	0.004	0.083	0.001	0.00
257	21.42	0.07	0.004	0.082	0.001	0.00
258	21.50	0.07	0.004	0.082	0.001	0.00
259	21.58	0.10	0.006	0.082	0.002	0.00
260	21.67	0.10	0.006	0.081	0.002	0.00
261	21.75	0.10	0.006	0.081	0.002	0.00
262	21.83	0.07	0.004	0.081	0.001	0.00
263	21.92	0.07	0.004	0.081	0.001	0.00
264	22.00	0.07	0.004	0.080	0.001	0.00
265	22.08	0.10	0.006	0.080	0.002	0.00
266	22.17	0.10	0.006	0.080	0.002	0.00
267	22.25	0.10	0.006	0.080	0.002	0.00
268	22.33	0.07	0.004	0.079	0.001	0.00
269	22.42	0.07	0.004	0.079	0.001	0.00
270	22.50	0.07	0.004	0.079	0.001	0.00
271	22.58	0.07	0.004	0.079	0.001	0.00
272	22.67	0.07	0.004	0.078	0.001	0.00
273	22.75	0.07	0.004	0.078	0.001	0.00
274	22.83	0.07	0.004	0.078	0.001	0.00
275	22.92	0.07	0.004	0.078	0.001	0.00
276	23.00	0.07	0.004	0.078	0.001	0.00
277	23.08	0.07	0.004	0.077	0.001	0.00
278	23.17	0.07	0.004	0.077	0.001	0.00
279	23.25	0.07	0.004	0.077	0.001	0.00
280	23.33	0.07	0.004	0.077	0.001	0.00
281	23.42	0.07	0.004	0.077	0.001	0.00
282	23.50	0.07	0.004	0.077	0.001	0.00
283	23.58	0.07	0.004	0.077	0.001	0.00
284	23.67	0.07	0.004	0.076	0.001	0.00
285	23.75	0.07	0.004	0.076	0.001	0.00
286	23.83	0.07	0.004	0.076	0.001	0.00
287	23.92	0.07	0.004	0.076	0.001	0.00
288	24.00	0.07	0.004	0.076	0.001	0.00
	Sum =	100.0			Sum =	4.5

Flood volume = Effective rainfall 0.38(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.012(Ac.Ft)
Total rainfall = 0.52(In)
Flood volume = 1376.8 Cubic Feet
Total soil loss = 524.9 Cubic Feet

Storm Event 2 Effective Rainfall = 0.983(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1 0.08	0.07	0.008	0.270	0.002	0.01
2 0.17	0.07	0.008	0.269	0.002	0.01

3	0.25	0.07	0.008	0.268	0.002	0.01
4	0.33	0.10	0.012	0.267	0.003	0.01
5	0.42	0.10	0.012	0.266	0.003	0.01
6	0.50	0.10	0.012	0.265	0.003	0.01
7	0.58	0.10	0.012	0.264	0.003	0.01
8	0.67	0.10	0.012	0.263	0.003	0.01
9	0.75	0.10	0.012	0.262	0.003	0.01
10	0.83	0.13	0.016	0.261	0.004	0.01
11	0.92	0.13	0.016	0.259	0.004	0.01
12	1.00	0.13	0.016	0.258	0.004	0.01
13	1.08	0.10	0.012	0.257	0.003	0.01
14	1.17	0.10	0.012	0.256	0.003	0.01
15	1.25	0.10	0.012	0.255	0.003	0.01
16	1.33	0.10	0.012	0.254	0.003	0.01
17	1.42	0.10	0.012	0.253	0.003	0.01
18	1.50	0.10	0.012	0.252	0.003	0.01
19	1.58	0.10	0.012	0.251	0.003	0.01
20	1.67	0.10	0.012	0.250	0.003	0.01
21	1.75	0.10	0.012	0.249	0.003	0.01
22	1.83	0.13	0.016	0.248	0.004	0.01
23	1.92	0.13	0.016	0.247	0.004	0.01
24	2.00	0.13	0.016	0.246	0.004	0.01
25	2.08	0.13	0.016	0.245	0.004	0.01
26	2.17	0.13	0.016	0.244	0.004	0.01
27	2.25	0.13	0.016	0.243	0.004	0.01
28	2.33	0.13	0.016	0.242	0.004	0.01
29	2.42	0.13	0.016	0.241	0.004	0.01
30	2.50	0.13	0.016	0.240	0.004	0.01
31	2.58	0.17	0.020	0.239	0.005	0.01
32	2.67	0.17	0.020	0.238	0.005	0.01
33	2.75	0.17	0.020	0.237	0.005	0.01
34	2.83	0.17	0.020	0.236	0.005	0.01
35	2.92	0.17	0.020	0.236	0.005	0.01
36	3.00	0.17	0.020	0.235	0.005	0.01
37	3.08	0.17	0.020	0.234	0.005	0.01
38	3.17	0.17	0.020	0.233	0.005	0.01
39	3.25	0.17	0.020	0.232	0.005	0.01
40	3.33	0.17	0.020	0.231	0.005	0.01
41	3.42	0.17	0.020	0.230	0.005	0.01
42	3.50	0.17	0.020	0.229	0.005	0.01
43	3.58	0.17	0.020	0.228	0.005	0.01
44	3.67	0.17	0.020	0.227	0.005	0.01
45	3.75	0.17	0.020	0.226	0.005	0.01
46	3.83	0.20	0.024	0.225	0.007	0.02
47	3.92	0.20	0.024	0.224	0.007	0.02
48	4.00	0.20	0.024	0.223	0.007	0.02
49	4.08	0.20	0.024	0.222	0.007	0.02
50	4.17	0.20	0.024	0.221	0.007	0.02
51	4.25	0.20	0.024	0.220	0.007	0.02
52	4.33	0.23	0.028	0.219	0.008	0.02
53	4.42	0.23	0.028	0.218	0.008	0.02
54	4.50	0.23	0.028	0.217	0.008	0.02
55	4.58	0.23	0.028	0.216	0.008	0.02
56	4.67	0.23	0.028	0.216	0.008	0.02
57	4.75	0.23	0.028	0.215	0.008	0.02
58	4.83	0.27	0.031	0.214	0.009	0.02
59	4.92	0.27	0.031	0.213	0.009	0.02
60	5.00	0.27	0.031	0.212	0.009	0.02
61	5.08	0.20	0.024	0.211	0.007	0.02
62	5.17	0.20	0.024	0.210	0.007	0.02
63	5.25	0.20	0.024	0.209	0.007	0.02
64	5.33	0.23	0.028	0.208	0.008	0.02
65	5.42	0.23	0.028	0.207	0.008	0.02
66	5.50	0.23	0.028	0.206	0.008	0.02
67	5.58	0.27	0.031	0.205	0.009	0.02
68	5.67	0.27	0.031	0.205	0.009	0.02
69	5.75	0.27	0.031	0.204	0.009	0.02
70	5.83	0.27	0.031	0.203	0.009	0.02
71	5.92	0.27	0.031	0.202	0.009	0.02
72	6.00	0.27	0.031	0.201	0.009	0.02
73	6.08	0.30	0.035	0.200	0.010	0.03

74	6.17	0.30	0.035	0.199	0.010	0.03
75	6.25	0.30	0.035	0.198	0.010	0.03
76	6.33	0.30	0.035	0.197	0.010	0.03
77	6.42	0.30	0.035	0.196	0.010	0.03
78	6.50	0.30	0.035	0.196	0.010	0.03
79	6.58	0.33	0.039	0.195	0.011	0.03
80	6.67	0.33	0.039	0.194	0.011	0.03
81	6.75	0.33	0.039	0.193	0.011	0.03
82	6.83	0.33	0.039	0.192	0.011	0.03
83	6.92	0.33	0.039	0.191	0.011	0.03
84	7.00	0.33	0.039	0.190	0.011	0.03
85	7.08	0.33	0.039	0.190	0.011	0.03
86	7.17	0.33	0.039	0.189	0.011	0.03
87	7.25	0.33	0.039	0.188	0.011	0.03
88	7.33	0.37	0.043	0.187	0.012	0.03
89	7.42	0.37	0.043	0.186	0.012	0.03
90	7.50	0.37	0.043	0.185	0.012	0.03
91	7.58	0.40	0.047	0.184	0.013	0.03
92	7.67	0.40	0.047	0.184	0.013	0.03
93	7.75	0.40	0.047	0.183	0.013	0.03
94	7.83	0.43	0.051	0.182	0.014	0.04
95	7.92	0.43	0.051	0.181	0.014	0.04
96	8.00	0.43	0.051	0.180	0.014	0.04
97	8.08	0.50	0.059	0.179	0.016	0.04
98	8.17	0.50	0.059	0.178	0.016	0.04
99	8.25	0.50	0.059	0.178	0.016	0.04
100	8.33	0.50	0.059	0.177	0.016	0.04
101	8.42	0.50	0.059	0.176	0.016	0.04
102	8.50	0.50	0.059	0.175	0.016	0.04
103	8.58	0.53	0.063	0.174	0.017	0.05
104	8.67	0.53	0.063	0.174	0.017	0.05
105	8.75	0.53	0.063	0.173	0.017	0.05
106	8.83	0.57	0.067	0.172	0.018	0.05
107	8.92	0.57	0.067	0.171	0.018	0.05
108	9.00	0.57	0.067	0.170	0.018	0.05
109	9.08	0.63	0.075	0.169	0.021	0.05
110	9.17	0.63	0.075	0.169	0.021	0.05
111	9.25	0.63	0.075	0.168	0.021	0.05
112	9.33	0.67	0.079	0.167	0.022	0.06
113	9.42	0.67	0.079	0.166	0.022	0.06
114	9.50	0.67	0.079	0.165	0.022	0.06
115	9.58	0.70	0.083	0.165	0.023	0.06
116	9.67	0.70	0.083	0.164	0.023	0.06
117	9.75	0.70	0.083	0.163	0.023	0.06
118	9.83	0.73	0.086	0.162	0.024	0.06
119	9.92	0.73	0.086	0.162	0.024	0.06
120	10.00	0.73	0.086	0.161	0.024	0.06
121	10.08	0.50	0.059	0.160	0.016	0.04
122	10.17	0.50	0.059	0.159	0.016	0.04
123	10.25	0.50	0.059	0.158	0.016	0.04
124	10.33	0.50	0.059	0.158	0.016	0.04
125	10.42	0.50	0.059	0.157	0.016	0.04
126	10.50	0.50	0.059	0.156	0.016	0.04
127	10.58	0.67	0.079	0.155	0.022	0.06
128	10.67	0.67	0.079	0.155	0.022	0.06
129	10.75	0.67	0.079	0.154	0.022	0.06
130	10.83	0.67	0.079	0.153	0.022	0.06
131	10.92	0.67	0.079	0.152	0.022	0.06
132	11.00	0.67	0.079	0.152	0.022	0.06
133	11.08	0.63	0.075	0.151	0.021	0.05
134	11.17	0.63	0.075	0.150	0.021	0.05
135	11.25	0.63	0.075	0.149	0.021	0.05
136	11.33	0.63	0.075	0.149	0.021	0.05
137	11.42	0.63	0.075	0.148	0.021	0.05
138	11.50	0.63	0.075	0.147	0.021	0.05
139	11.58	0.57	0.067	0.146	0.018	0.05
140	11.67	0.57	0.067	0.146	0.018	0.05
141	11.75	0.57	0.067	0.145	0.018	0.05
142	11.83	0.60	0.071	0.144	0.020	0.05
143	11.92	0.60	0.071	0.144	0.020	0.05
144	12.00	0.60	0.071	0.143	0.020	0.05

145	12.08	0.83	0.098	0.142	0.027	0.07
146	12.17	0.83	0.098	0.141	0.027	0.07
147	12.25	0.83	0.098	0.141	0.027	0.07
148	12.33	0.87	0.102	0.140	0.028	0.07
149	12.42	0.87	0.102	0.139	0.028	0.07
150	12.50	0.87	0.102	0.139	0.028	0.07
151	12.58	0.93	0.110	0.138	0.030	0.08
152	12.67	0.93	0.110	0.137	0.030	0.08
153	12.75	0.93	0.110	0.136	0.030	0.08
154	12.83	0.97	0.114	0.136	0.031	0.08
155	12.92	0.97	0.114	0.135	0.031	0.08
156	13.00	0.97	0.114	0.134	0.031	0.08
157	13.08	1.13	0.134	0.134	0.037	0.10
158	13.17	1.13	0.134	0.133	---	0.00
159	13.25	1.13	0.134	0.132	---	0.00
160	13.33	1.13	0.134	0.132	---	0.00
161	13.42	1.13	0.134	0.131	---	0.00
162	13.50	1.13	0.134	0.130	---	0.00
163	13.58	0.77	0.090	0.130	0.025	0.07
164	13.67	0.77	0.090	0.129	0.025	0.07
165	13.75	0.77	0.090	0.128	0.025	0.07
166	13.83	0.77	0.090	0.128	0.025	0.07
167	13.92	0.77	0.090	0.127	0.025	0.07
168	14.00	0.77	0.090	0.126	0.025	0.07
169	14.08	0.90	0.106	0.126	0.029	0.08
170	14.17	0.90	0.106	0.125	0.029	0.08
171	14.25	0.90	0.106	0.125	0.029	0.08
172	14.33	0.87	0.102	0.124	0.028	0.07
173	14.42	0.87	0.102	0.123	0.028	0.07
174	14.50	0.87	0.102	0.123	0.028	0.07
175	14.58	0.87	0.102	0.122	0.028	0.07
176	14.67	0.87	0.102	0.121	0.028	0.07
177	14.75	0.87	0.102	0.121	0.028	0.07
178	14.83	0.83	0.098	0.120	0.027	0.07
179	14.92	0.83	0.098	0.120	0.027	0.07
180	15.00	0.83	0.098	0.119	0.027	0.07
181	15.08	0.80	0.094	0.118	0.026	0.07
182	15.17	0.80	0.094	0.118	0.026	0.07
183	15.25	0.80	0.094	0.117	0.026	0.07
184	15.33	0.77	0.090	0.116	0.025	0.07
185	15.42	0.77	0.090	0.116	0.025	0.07
186	15.50	0.77	0.090	0.115	0.025	0.07
187	15.58	0.63	0.075	0.115	0.021	0.05
188	15.67	0.63	0.075	0.114	0.021	0.05
189	15.75	0.63	0.075	0.114	0.021	0.05
190	15.83	0.63	0.075	0.113	0.021	0.05
191	15.92	0.63	0.075	0.112	0.021	0.05
192	16.00	0.63	0.075	0.112	0.021	0.05
193	16.08	0.13	0.016	0.111	0.004	0.01
194	16.17	0.13	0.016	0.111	0.004	0.01
195	16.25	0.13	0.016	0.110	0.004	0.01
196	16.33	0.13	0.016	0.110	0.004	0.01
197	16.42	0.13	0.016	0.109	0.004	0.01
198	16.50	0.13	0.016	0.108	0.004	0.01
199	16.58	0.10	0.012	0.108	0.003	0.01
200	16.67	0.10	0.012	0.107	0.003	0.01
201	16.75	0.10	0.012	0.107	0.003	0.01
202	16.83	0.10	0.012	0.106	0.003	0.01
203	16.92	0.10	0.012	0.106	0.003	0.01
204	17.00	0.10	0.012	0.105	0.003	0.01
205	17.08	0.17	0.020	0.105	0.005	0.01
206	17.17	0.17	0.020	0.104	0.005	0.01
207	17.25	0.17	0.020	0.104	0.005	0.01
208	17.33	0.17	0.020	0.103	0.005	0.01
209	17.42	0.17	0.020	0.103	0.005	0.01
210	17.50	0.17	0.020	0.102	0.005	0.01
211	17.58	0.17	0.020	0.102	0.005	0.01
212	17.67	0.17	0.020	0.101	0.005	0.01
213	17.75	0.17	0.020	0.100	0.005	0.01
214	17.83	0.13	0.016	0.100	0.004	0.01
215	17.92	0.13	0.016	0.100	0.004	0.01

216	18.00	0.13	0.016	0.099	0.004	0.01
217	18.08	0.13	0.016	0.099	0.004	0.01
218	18.17	0.13	0.016	0.098	0.004	0.01
219	18.25	0.13	0.016	0.098	0.004	0.01
220	18.33	0.13	0.016	0.097	0.004	0.01
221	18.42	0.13	0.016	0.097	0.004	0.01
222	18.50	0.13	0.016	0.096	0.004	0.01
223	18.58	0.10	0.012	0.096	0.003	0.01
224	18.67	0.10	0.012	0.095	0.003	0.01
225	18.75	0.10	0.012	0.095	0.003	0.01
226	18.83	0.07	0.008	0.094	0.002	0.01
227	18.92	0.07	0.008	0.094	0.002	0.01
228	19.00	0.07	0.008	0.093	0.002	0.01
229	19.08	0.10	0.012	0.093	0.003	0.01
230	19.17	0.10	0.012	0.093	0.003	0.01
231	19.25	0.10	0.012	0.092	0.003	0.01
232	19.33	0.13	0.016	0.092	0.004	0.01
233	19.42	0.13	0.016	0.091	0.004	0.01
234	19.50	0.13	0.016	0.091	0.004	0.01
235	19.58	0.10	0.012	0.090	0.003	0.01
236	19.67	0.10	0.012	0.090	0.003	0.01
237	19.75	0.10	0.012	0.090	0.003	0.01
238	19.83	0.07	0.008	0.089	0.002	0.01
239	19.92	0.07	0.008	0.089	0.002	0.01
240	20.00	0.07	0.008	0.088	0.002	0.01
241	20.08	0.10	0.012	0.088	0.003	0.01
242	20.17	0.10	0.012	0.088	0.003	0.01
243	20.25	0.10	0.012	0.087	0.003	0.01
244	20.33	0.10	0.012	0.087	0.003	0.01
245	20.42	0.10	0.012	0.086	0.003	0.01
246	20.50	0.10	0.012	0.086	0.003	0.01
247	20.58	0.10	0.012	0.086	0.003	0.01
248	20.67	0.10	0.012	0.085	0.003	0.01
249	20.75	0.10	0.012	0.085	0.003	0.01
250	20.83	0.07	0.008	0.085	0.002	0.01
251	20.92	0.07	0.008	0.084	0.002	0.01
252	21.00	0.07	0.008	0.084	0.002	0.01
253	21.08	0.10	0.012	0.084	0.003	0.01
254	21.17	0.10	0.012	0.083	0.003	0.01
255	21.25	0.10	0.012	0.083	0.003	0.01
256	21.33	0.07	0.008	0.083	0.002	0.01
257	21.42	0.07	0.008	0.082	0.002	0.01
258	21.50	0.07	0.008	0.082	0.002	0.01
259	21.58	0.10	0.012	0.082	0.003	0.01
260	21.67	0.10	0.012	0.081	0.003	0.01
261	21.75	0.10	0.012	0.081	0.003	0.01
262	21.83	0.07	0.008	0.081	0.002	0.01
263	21.92	0.07	0.008	0.081	0.002	0.01
264	22.00	0.07	0.008	0.080	0.002	0.01
265	22.08	0.10	0.012	0.080	0.003	0.01
266	22.17	0.10	0.012	0.080	0.003	0.01
267	22.25	0.10	0.012	0.080	0.003	0.01
268	22.33	0.07	0.008	0.079	0.002	0.01
269	22.42	0.07	0.008	0.079	0.002	0.01
270	22.50	0.07	0.008	0.079	0.002	0.01
271	22.58	0.07	0.008	0.079	0.002	0.01
272	22.67	0.07	0.008	0.078	0.002	0.01
273	22.75	0.07	0.008	0.078	0.002	0.01
274	22.83	0.07	0.008	0.078	0.002	0.01
275	22.92	0.07	0.008	0.078	0.002	0.01
276	23.00	0.07	0.008	0.078	0.002	0.01
277	23.08	0.07	0.008	0.077	0.002	0.01
278	23.17	0.07	0.008	0.077	0.002	0.01
279	23.25	0.07	0.008	0.077	0.002	0.01
280	23.33	0.07	0.008	0.077	0.002	0.01
281	23.42	0.07	0.008	0.077	0.002	0.01
282	23.50	0.07	0.008	0.077	0.002	0.01
283	23.58	0.07	0.008	0.077	0.002	0.01
284	23.67	0.07	0.008	0.076	0.002	0.01
285	23.75	0.07	0.008	0.076	0.002	0.01
286	23.83	0.07	0.008	0.076	0.002	0.01

287	23.92	0.07	0.008	0.076	0.002	0.01
288	24.00	0.07	0.008	0.076	0.002	0.01
	Sum =	100.0			Sum =	8.1

Flood volume = Effective rainfall 0.67(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.31(In)
Total soil loss = 0.026(Ac.Ft)
Total rainfall = 0.98(In)
Flood volume = 2463.9 Cubic Feet
Total soil loss = 1139.4 Cubic Feet

Storm Event 1 Effective Rainfall = 2.730(In)

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.022	0.270	0.006	0.02
2	0.17	0.07	0.022	0.269	0.006	0.02
3	0.25	0.07	0.022	0.268	0.006	0.02
4	0.33	0.10	0.033	0.267	0.009	0.02
5	0.42	0.10	0.033	0.266	0.009	0.02
6	0.50	0.10	0.033	0.265	0.009	0.02
7	0.58	0.10	0.033	0.264	0.009	0.02
8	0.67	0.10	0.033	0.263	0.009	0.02
9	0.75	0.10	0.033	0.262	0.009	0.02
10	0.83	0.13	0.044	0.261	0.012	0.03
11	0.92	0.13	0.044	0.259	0.012	0.03
12	1.00	0.13	0.044	0.258	0.012	0.03
13	1.08	0.10	0.033	0.257	0.009	0.02
14	1.17	0.10	0.033	0.256	0.009	0.02
15	1.25	0.10	0.033	0.255	0.009	0.02
16	1.33	0.10	0.033	0.254	0.009	0.02
17	1.42	0.10	0.033	0.253	0.009	0.02
18	1.50	0.10	0.033	0.252	0.009	0.02
19	1.58	0.10	0.033	0.251	0.009	0.02
20	1.67	0.10	0.033	0.250	0.009	0.02
21	1.75	0.10	0.033	0.249	0.009	0.02
22	1.83	0.13	0.044	0.248	0.012	0.03
23	1.92	0.13	0.044	0.247	0.012	0.03
24	2.00	0.13	0.044	0.246	0.012	0.03
25	2.08	0.13	0.044	0.245	0.012	0.03
26	2.17	0.13	0.044	0.244	0.012	0.03
27	2.25	0.13	0.044	0.243	0.012	0.03
28	2.33	0.13	0.044	0.242	0.012	0.03
29	2.42	0.13	0.044	0.241	0.012	0.03
30	2.50	0.13	0.044	0.240	0.012	0.03
31	2.58	0.17	0.055	0.239	0.015	0.04
32	2.67	0.17	0.055	0.238	0.015	0.04
33	2.75	0.17	0.055	0.237	0.015	0.04
34	2.83	0.17	0.055	0.236	0.015	0.04
35	2.92	0.17	0.055	0.236	0.015	0.04
36	3.00	0.17	0.055	0.235	0.015	0.04
37	3.08	0.17	0.055	0.234	0.015	0.04
38	3.17	0.17	0.055	0.233	0.015	0.04
39	3.25	0.17	0.055	0.232	0.015	0.04
40	3.33	0.17	0.055	0.231	0.015	0.04
41	3.42	0.17	0.055	0.230	0.015	0.04
42	3.50	0.17	0.055	0.229	0.015	0.04
43	3.58	0.17	0.055	0.228	0.015	0.04
44	3.67	0.17	0.055	0.227	0.015	0.04
45	3.75	0.17	0.055	0.226	0.015	0.04
46	3.83	0.20	0.066	0.225	0.018	0.05
47	3.92	0.20	0.066	0.224	0.018	0.05
48	4.00	0.20	0.066	0.223	0.018	0.05
49	4.08	0.20	0.066	0.222	0.018	0.05
50	4.17	0.20	0.066	0.221	0.018	0.05
51	4.25	0.20	0.066	0.220	0.018	0.05
52	4.33	0.23	0.076	0.219	0.021	0.06
53	4.42	0.23	0.076	0.218	0.021	0.06
54	4.50	0.23	0.076	0.217	0.021	0.06
55	4.58	0.23	0.076	0.216	0.021	0.06

56	4.67	0.23	0.076	0.216	0.021	0.06
57	4.75	0.23	0.076	0.215	0.021	0.06
58	4.83	0.27	0.087	0.214	0.024	0.06
59	4.92	0.27	0.087	0.213	0.024	0.06
60	5.00	0.27	0.087	0.212	0.024	0.06
61	5.08	0.20	0.066	0.211	0.018	0.05
62	5.17	0.20	0.066	0.210	0.018	0.05
63	5.25	0.20	0.066	0.209	0.018	0.05
64	5.33	0.23	0.076	0.208	0.021	0.06
65	5.42	0.23	0.076	0.207	0.021	0.06
66	5.50	0.23	0.076	0.206	0.021	0.06
67	5.58	0.27	0.087	0.205	0.024	0.06
68	5.67	0.27	0.087	0.205	0.024	0.06
69	5.75	0.27	0.087	0.204	0.024	0.06
70	5.83	0.27	0.087	0.203	0.024	0.06
71	5.92	0.27	0.087	0.202	0.024	0.06
72	6.00	0.27	0.087	0.201	0.024	0.06
73	6.08	0.30	0.098	0.200	0.027	0.07
74	6.17	0.30	0.098	0.199	0.027	0.07
75	6.25	0.30	0.098	0.198	0.027	0.07
76	6.33	0.30	0.098	0.197	0.027	0.07
77	6.42	0.30	0.098	0.196	0.027	0.07
78	6.50	0.30	0.098	0.196	0.027	0.07
79	6.58	0.33	0.109	0.195	0.030	0.08
80	6.67	0.33	0.109	0.194	0.030	0.08
81	6.75	0.33	0.109	0.193	0.030	0.08
82	6.83	0.33	0.109	0.192	0.030	0.08
83	6.92	0.33	0.109	0.191	0.030	0.08
84	7.00	0.33	0.109	0.190	0.030	0.08
85	7.08	0.33	0.109	0.190	0.030	0.08
86	7.17	0.33	0.109	0.189	0.030	0.08
87	7.25	0.33	0.109	0.188	0.030	0.08
88	7.33	0.37	0.120	0.187	0.033	0.09
89	7.42	0.37	0.120	0.186	0.033	0.09
90	7.50	0.37	0.120	0.185	0.033	0.09
91	7.58	0.40	0.131	0.184	0.036	0.09
92	7.67	0.40	0.131	0.184	0.036	0.09
93	7.75	0.40	0.131	0.183	0.036	0.09
94	7.83	0.43	0.142	0.182	0.039	0.10
95	7.92	0.43	0.142	0.181	0.039	0.10
96	8.00	0.43	0.142	0.180	0.039	0.10
97	8.08	0.50	0.164	0.179	0.045	0.12
98	8.17	0.50	0.164	0.178	0.045	0.12
99	8.25	0.50	0.164	0.178	0.045	0.12
100	8.33	0.50	0.164	0.177	0.045	0.12
101	8.42	0.50	0.164	0.176	0.045	0.12
102	8.50	0.50	0.164	0.175	0.045	0.12
103	8.58	0.53	0.175	0.174	---	0.00
104	8.67	0.53	0.175	0.174	---	0.00
105	8.75	0.53	0.175	0.173	---	0.00
106	8.83	0.57	0.186	0.172	---	0.01
107	8.92	0.57	0.186	0.171	---	0.01
108	9.00	0.57	0.186	0.170	---	0.02
109	9.08	0.63	0.207	0.169	---	0.04
110	9.17	0.63	0.207	0.169	---	0.04
111	9.25	0.63	0.207	0.168	---	0.04
112	9.33	0.67	0.218	0.167	---	0.05
113	9.42	0.67	0.218	0.166	---	0.05
114	9.50	0.67	0.218	0.165	---	0.05
115	9.58	0.70	0.229	0.165	---	0.06
116	9.67	0.70	0.229	0.164	---	0.07
117	9.75	0.70	0.229	0.163	---	0.07
118	9.83	0.73	0.240	0.162	---	0.08
119	9.92	0.73	0.240	0.162	---	0.08
120	10.00	0.73	0.240	0.161	---	0.08
121	10.08	0.50	0.164	0.160	---	0.00
122	10.17	0.50	0.164	0.159	---	0.00
123	10.25	0.50	0.164	0.158	---	0.01
124	10.33	0.50	0.164	0.158	---	0.01
125	10.42	0.50	0.164	0.157	---	0.01
126	10.50	0.50	0.164	0.156	---	0.01

127	10.58	0.67	0.218	0.155	---	0.06
128	10.67	0.67	0.218	0.155	---	0.06
129	10.75	0.67	0.218	0.154	---	0.06
130	10.83	0.67	0.218	0.153	---	0.07
131	10.92	0.67	0.218	0.152	---	0.07
132	11.00	0.67	0.218	0.152	---	0.07
133	11.08	0.63	0.207	0.151	---	0.06
134	11.17	0.63	0.207	0.150	---	0.06
135	11.25	0.63	0.207	0.149	---	0.06
136	11.33	0.63	0.207	0.149	---	0.06
137	11.42	0.63	0.207	0.148	---	0.06
138	11.50	0.63	0.207	0.147	---	0.06
139	11.58	0.57	0.186	0.146	---	0.04
140	11.67	0.57	0.186	0.146	---	0.04
141	11.75	0.57	0.186	0.145	---	0.04
142	11.83	0.60	0.197	0.144	---	0.05
143	11.92	0.60	0.197	0.144	---	0.05
144	12.00	0.60	0.197	0.143	---	0.05
145	12.08	0.83	0.273	0.142	---	0.13
146	12.17	0.83	0.273	0.141	---	0.13
147	12.25	0.83	0.273	0.141	---	0.13
148	12.33	0.87	0.284	0.140	---	0.14
149	12.42	0.87	0.284	0.139	---	0.14
150	12.50	0.87	0.284	0.139	---	0.15
151	12.58	0.93	0.306	0.138	---	0.17
152	12.67	0.93	0.306	0.137	---	0.17
153	12.75	0.93	0.306	0.136	---	0.17
154	12.83	0.97	0.317	0.136	---	0.18
155	12.92	0.97	0.317	0.135	---	0.18
156	13.00	0.97	0.317	0.134	---	0.18
157	13.08	1.13	0.371	0.134	---	0.24
158	13.17	1.13	0.371	0.133	---	0.24
159	13.25	1.13	0.371	0.132	---	0.24
160	13.33	1.13	0.371	0.132	---	0.24
161	13.42	1.13	0.371	0.131	---	0.24
162	13.50	1.13	0.371	0.130	---	0.24
163	13.58	0.77	0.251	0.130	---	0.12
164	13.67	0.77	0.251	0.129	---	0.12
165	13.75	0.77	0.251	0.128	---	0.12
166	13.83	0.77	0.251	0.128	---	0.12
167	13.92	0.77	0.251	0.127	---	0.12
168	14.00	0.77	0.251	0.126	---	0.12
169	14.08	0.90	0.295	0.126	---	0.17
170	14.17	0.90	0.295	0.125	---	0.17
171	14.25	0.90	0.295	0.125	---	0.17
172	14.33	0.87	0.284	0.124	---	0.16
173	14.42	0.87	0.284	0.123	---	0.16
174	14.50	0.87	0.284	0.123	---	0.16
175	14.58	0.87	0.284	0.122	---	0.16
176	14.67	0.87	0.284	0.121	---	0.16
177	14.75	0.87	0.284	0.121	---	0.16
178	14.83	0.83	0.273	0.120	---	0.15
179	14.92	0.83	0.273	0.120	---	0.15
180	15.00	0.83	0.273	0.119	---	0.15
181	15.08	0.80	0.262	0.118	---	0.14
182	15.17	0.80	0.262	0.118	---	0.14
183	15.25	0.80	0.262	0.117	---	0.15
184	15.33	0.77	0.251	0.116	---	0.13
185	15.42	0.77	0.251	0.116	---	0.14
186	15.50	0.77	0.251	0.115	---	0.14
187	15.58	0.63	0.207	0.115	---	0.09
188	15.67	0.63	0.207	0.114	---	0.09
189	15.75	0.63	0.207	0.114	---	0.09
190	15.83	0.63	0.207	0.113	---	0.09
191	15.92	0.63	0.207	0.112	---	0.10
192	16.00	0.63	0.207	0.112	---	0.10
193	16.08	0.13	0.044	0.111	0.012	0.03
194	16.17	0.13	0.044	0.111	0.012	0.03
195	16.25	0.13	0.044	0.110	0.012	0.03
196	16.33	0.13	0.044	0.110	0.012	0.03
197	16.42	0.13	0.044	0.109	0.012	0.03

198	16.50	0.13	0.044	0.108	0.012	0.03
199	16.58	0.10	0.033	0.108	0.009	0.02
200	16.67	0.10	0.033	0.107	0.009	0.02
201	16.75	0.10	0.033	0.107	0.009	0.02
202	16.83	0.10	0.033	0.106	0.009	0.02
203	16.92	0.10	0.033	0.106	0.009	0.02
204	17.00	0.10	0.033	0.105	0.009	0.02
205	17.08	0.17	0.055	0.105	0.015	0.04
206	17.17	0.17	0.055	0.104	0.015	0.04
207	17.25	0.17	0.055	0.104	0.015	0.04
208	17.33	0.17	0.055	0.103	0.015	0.04
209	17.42	0.17	0.055	0.103	0.015	0.04
210	17.50	0.17	0.055	0.102	0.015	0.04
211	17.58	0.17	0.055	0.102	0.015	0.04
212	17.67	0.17	0.055	0.101	0.015	0.04
213	17.75	0.17	0.055	0.100	0.015	0.04
214	17.83	0.13	0.044	0.100	0.012	0.03
215	17.92	0.13	0.044	0.100	0.012	0.03
216	18.00	0.13	0.044	0.099	0.012	0.03
217	18.08	0.13	0.044	0.099	0.012	0.03
218	18.17	0.13	0.044	0.098	0.012	0.03
219	18.25	0.13	0.044	0.098	0.012	0.03
220	18.33	0.13	0.044	0.097	0.012	0.03
221	18.42	0.13	0.044	0.097	0.012	0.03
222	18.50	0.13	0.044	0.096	0.012	0.03
223	18.58	0.10	0.033	0.096	0.009	0.02
224	18.67	0.10	0.033	0.095	0.009	0.02
225	18.75	0.10	0.033	0.095	0.009	0.02
226	18.83	0.07	0.022	0.094	0.006	0.02
227	18.92	0.07	0.022	0.094	0.006	0.02
228	19.00	0.07	0.022	0.093	0.006	0.02
229	19.08	0.10	0.033	0.093	0.009	0.02
230	19.17	0.10	0.033	0.093	0.009	0.02
231	19.25	0.10	0.033	0.092	0.009	0.02
232	19.33	0.13	0.044	0.092	0.012	0.03
233	19.42	0.13	0.044	0.091	0.012	0.03
234	19.50	0.13	0.044	0.091	0.012	0.03
235	19.58	0.10	0.033	0.090	0.009	0.02
236	19.67	0.10	0.033	0.090	0.009	0.02
237	19.75	0.10	0.033	0.090	0.009	0.02
238	19.83	0.07	0.022	0.089	0.006	0.02
239	19.92	0.07	0.022	0.089	0.006	0.02
240	20.00	0.07	0.022	0.088	0.006	0.02
241	20.08	0.10	0.033	0.088	0.009	0.02
242	20.17	0.10	0.033	0.088	0.009	0.02
243	20.25	0.10	0.033	0.087	0.009	0.02
244	20.33	0.10	0.033	0.087	0.009	0.02
245	20.42	0.10	0.033	0.086	0.009	0.02
246	20.50	0.10	0.033	0.086	0.009	0.02
247	20.58	0.10	0.033	0.086	0.009	0.02
248	20.67	0.10	0.033	0.085	0.009	0.02
249	20.75	0.10	0.033	0.085	0.009	0.02
250	20.83	0.07	0.022	0.085	0.006	0.02
251	20.92	0.07	0.022	0.084	0.006	0.02
252	21.00	0.07	0.022	0.084	0.006	0.02
253	21.08	0.10	0.033	0.084	0.009	0.02
254	21.17	0.10	0.033	0.083	0.009	0.02
255	21.25	0.10	0.033	0.083	0.009	0.02
256	21.33	0.07	0.022	0.083	0.006	0.02
257	21.42	0.07	0.022	0.082	0.006	0.02
258	21.50	0.07	0.022	0.082	0.006	0.02
259	21.58	0.10	0.033	0.082	0.009	0.02
260	21.67	0.10	0.033	0.081	0.009	0.02
261	21.75	0.10	0.033	0.081	0.009	0.02
262	21.83	0.07	0.022	0.081	0.006	0.02
263	21.92	0.07	0.022	0.081	0.006	0.02
264	22.00	0.07	0.022	0.080	0.006	0.02
265	22.08	0.10	0.033	0.080	0.009	0.02
266	22.17	0.10	0.033	0.080	0.009	0.02
267	22.25	0.10	0.033	0.080	0.009	0.02
268	22.33	0.07	0.022	0.079	0.006	0.02

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269  22.42     0.07      0.022         0.079     0.006         0.02
270  22.50     0.07      0.022         0.079     0.006         0.02
271  22.58     0.07      0.022         0.079     0.006         0.02
272  22.67     0.07      0.022         0.078     0.006         0.02
273  22.75     0.07      0.022         0.078     0.006         0.02
274  22.83     0.07      0.022         0.078     0.006         0.02
275  22.92     0.07      0.022         0.078     0.006         0.02
276  23.00     0.07      0.022         0.078     0.006         0.02
277  23.08     0.07      0.022         0.077     0.006         0.02
278  23.17     0.07      0.022         0.077     0.006         0.02
279  23.25     0.07      0.022         0.077     0.006         0.02
280  23.33     0.07      0.022         0.077     0.006         0.02
281  23.42     0.07      0.022         0.077     0.006         0.02
282  23.50     0.07      0.022         0.077     0.006         0.02
283  23.58     0.07      0.022         0.077     0.006         0.02
284  23.67     0.07      0.022         0.076     0.006         0.02
285  23.75     0.07      0.022         0.076     0.006         0.02
286  23.83     0.07      0.022         0.076     0.006         0.02
287  23.92     0.07      0.022         0.076     0.006         0.02
288  24.00     0.07      0.022         0.076     0.006         0.02
    Sum =     100.0                                   Sum =    17.1
      Flood volume = Effective rainfall      1.42(In)
       times area       1.0(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      1.31(In)
      Total soil loss =     0.110(Ac.Ft)
      Total rainfall =      2.73(In)
      Flood volume =        5210.6 Cubic Feet
      Total soil loss =        4798.4 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.245(CFS)
      ---------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        TOTAL OF: 4       24 - H O U R    S T O R M  E V E N T S
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0000      0.00  Q         |         |         |         |
   0+15       0.0000      0.00  Q         |         |         |         |
   0+20       0.0001      0.00  Q         |         |         |         |
   0+25       0.0001      0.00  Q         |         |         |         |
   0+30       0.0001      0.00  Q         |         |         |         |
   0+35       0.0001      0.00  Q         |         |         |         |
   0+40       0.0002      0.00  Q         |         |         |         |
   0+45       0.0002      0.00  Q         |         |         |         |
   0+50       0.0002      0.00  Q         |         |         |         |
   0+55       0.0003      0.00  Q         |         |         |         |
   1+ 0       0.0003      0.00  Q         |         |         |         |
   1+ 5       0.0003      0.00  Q         |         |         |         |
   1+10       0.0003      0.00  Q         |         |         |         |
   1+15       0.0004      0.00  Q         |         |         |         |
   1+20       0.0004      0.00  Q         |         |         |         |
   1+25       0.0004      0.00  Q         |         |         |         |
   1+30       0.0004      0.00  Q         |         |         |         |
   1+35       0.0005      0.00  Q         |         |         |         |
   1+40       0.0005      0.00  Q         |         |         |         |
   1+45       0.0005      0.00  Q         |         |         |         |
   1+50       0.0005      0.00  Q         |         |         |         |
   1+55       0.0006      0.00  Q         |         |         |         |
   2+ 0       0.0006      0.00  Q         |         |         |         |
   2+ 5       0.0006      0.00  Q         |         |         |         |
   2+10       0.0007      0.00  Q         |         |         |         |
   2+15       0.0007      0.00  Q         |         |         |         |
   2+20       0.0007      0.00  Q         |         |         |         |
   2+25       0.0008      0.00  Q         |         |         |         |
   2+30       0.0008      0.00  Q         |         |         |         |
   2+35       0.0008      0.01  Q         |         |         |         |
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2+40	0.0009	0.01	Q	|	|	|	|
2+45	0.0009	0.01	Q	|	|	|	|
2+50	0.0010	0.01	Q	|	|	|	|
2+55	0.0010	0.01	Q	|	|	|	|
3+ 0	0.0011	0.01	Q	|	|	|	|
3+ 5	0.0011	0.01	Q	|	|	|	|
3+10	0.0011	0.01	Q	|	|	|	|
3+15	0.0012	0.01	Q	|	|	|	|
3+20	0.0012	0.01	Q	|	|	|	|
3+25	0.0013	0.01	Q	|	|	|	|
3+30	0.0013	0.01	Q	|	|	|	|
3+35	0.0013	0.01	Q	|	|	|	|
3+40	0.0014	0.01	Q	|	|	|	|
3+45	0.0014	0.01	Q	|	|	|	|
3+50	0.0015	0.01	Q	|	|	|	|
3+55	0.0015	0.01	Q	|	|	|	|
4+ 0	0.0016	0.01	Q	|	|	|	|
4+ 5	0.0016	0.01	Q	|	|	|	|
4+10	0.0017	0.01	Q	|	|	|	|
4+15	0.0017	0.01	Q	|	|	|	|
4+20	0.0018	0.01	Q	|	|	|	|
4+25	0.0018	0.01	Q	|	|	|	|
4+30	0.0019	0.01	Q	|	|	|	|
4+35	0.0020	0.01	Q	|	|	|	|
4+40	0.0020	0.01	Q	|	|	|	|
4+45	0.0021	0.01	Q	|	|	|	|
4+50	0.0021	0.01	Q	|	|	|	|
4+55	0.0022	0.01	Q	|	|	|	|
5+ 0	0.0023	0.01	Q	|	|	|	|
5+ 5	0.0023	0.01	Q	|	|	|	|
5+10	0.0024	0.01	Q	|	|	|	|
5+15	0.0024	0.01	Q	|	|	|	|
5+20	0.0025	0.01	Q	|	|	|	|
5+25	0.0025	0.01	Q	|	|	|	|
5+30	0.0026	0.01	Q	|	|	|	|
5+35	0.0027	0.01	Q	|	|	|	|
5+40	0.0027	0.01	Q	|	|	|	|
5+45	0.0028	0.01	Q	|	|	|	|
5+50	0.0029	0.01	Q	|	|	|	|
5+55	0.0029	0.01	Q	|	|	|	|
6+ 0	0.0030	0.01	Q	|	|	|	|
6+ 5	0.0031	0.01	Q	|	|	|	|
6+10	0.0031	0.01	Q	|	|	|	|
6+15	0.0032	0.01	Q	|	|	|	|
6+20	0.0033	0.01	Q	|	|	|	|
6+25	0.0034	0.01	Q	|	|	|	|
6+30	0.0034	0.01	Q	|	|	|	|
6+35	0.0035	0.01	Q	|	|	|	|
6+40	0.0036	0.01	Q	|	|	|	|
6+45	0.0037	0.01	Q	|	|	|	|
6+50	0.0038	0.01	Q	|	|	|	|
6+55	0.0038	0.01	Q	|	|	|	|
7+ 0	0.0039	0.01	Q	|	|	|	|
7+ 5	0.0040	0.01	Q	|	|	|	|
7+10	0.0041	0.01	Q	|	|	|	|
7+15	0.0042	0.01	Q	|	|	|	|
7+20	0.0043	0.01	Q	|	|	|	|
7+25	0.0044	0.01	Q	|	|	|	|
7+30	0.0045	0.01	Q	|	|	|	|
7+35	0.0045	0.01	Q	|	|	|	|
7+40	0.0046	0.01	Q	|	|	|	|
7+45	0.0047	0.01	Q	|	|	|	|
7+50	0.0049	0.02	Q	|	|	|	|
7+55	0.0050	0.02	Q	|	|	|	|
8+ 0	0.0051	0.02	Q	|	|	|	|
8+ 5	0.0052	0.02	Q	|	|	|	|
8+10	0.0053	0.02	Q	|	|	|	|
8+15	0.0054	0.02	Q	|	|	|	|
8+20	0.0056	0.02	Q	|	|	|	|
8+25	0.0057	0.02	Q	|	|	|	|
8+30	0.0058	0.02	Q	|	|	|	|

8+35	0.0059	0.02	QV	|	|	|	|
8+40	0.0061	0.02	QV	|	|	|	|
8+45	0.0062	0.02	QV	|	|	|	|
8+50	0.0063	0.02	QV	|	|	|	|
8+55	0.0065	0.02	QV	|	|	|	|
9+ 0	0.0066	0.02	QV	|	|	|	|
9+ 5	0.0068	0.02	QV	|	|	|	|
9+10	0.0069	0.02	QV	|	|	|	|
9+15	0.0071	0.02	QV	|	|	|	|
9+20	0.0073	0.02	QV	|	|	|	|
9+25	0.0074	0.02	QV	|	|	|	|
9+30	0.0076	0.02	QV	|	|	|	|
9+35	0.0078	0.02	QV	|	|	|	|
9+40	0.0079	0.03	QV	|	|	|	|
9+45	0.0081	0.03	QV	|	|	|	|
9+50	0.0083	0.03	QV	|	|	|	|
9+55	0.0085	0.03	QV	|	|	|	|
10+ 0	0.0087	0.03	QV	|	|	|	|
10+ 5	0.0088	0.02	QV	|	|	|	|
10+10	0.0089	0.02	QV	|	|	|	|
10+15	0.0091	0.02	QV	|	|	|	|
10+20	0.0092	0.02	QV	|	|	|	|
10+25	0.0093	0.02	QV	|	|	|	|
10+30	0.0094	0.02	QV	|	|	|	|
10+35	0.0096	0.02	QV	|	|	|	|
10+40	0.0097	0.02	QV	|	|	|	|
10+45	0.0099	0.02	QV	|	|	|	|
10+50	0.0101	0.02	QV	|	|	|	|
10+55	0.0102	0.02	QV	|	|	|	|
11+ 0	0.0104	0.02	QV	|	|	|	|
11+ 5	0.0106	0.02	QV	|	|	|	|
11+10	0.0107	0.02	QV	|	|	|	|
11+15	0.0109	0.02	QV	|	|	|	|
11+20	0.0110	0.02	QV	|	|	|	|
11+25	0.0112	0.02	QV	|	|	|	|
11+30	0.0114	0.02	QV	|	|	|	|
11+35	0.0115	0.02	QV	|	|	|	|
11+40	0.0116	0.02	Q V	|	|	|	|
11+45	0.0118	0.02	Q V	|	|	|	|
11+50	0.0119	0.02	Q V	|	|	|	|
11+55	0.0121	0.02	Q V	|	|	|	|
12+ 0	0.0122	0.02	Q V	|	|	|	|
12+ 5	0.0124	0.03	Q V	|	|	|	|
12+10	0.0126	0.03	Q V	|	|	|	|
12+15	0.0128	0.03	Q V	|	|	|	|
12+20	0.0130	0.03	Q V	|	|	|	|
12+25	0.0133	0.03	Q V	|	|	|	|
12+30	0.0135	0.03	Q V	|	|	|	|
12+35	0.0137	0.03	Q V	|	|	|	|
12+40	0.0139	0.03	Q V	|	|	|	|
12+45	0.0142	0.03	Q V	|	|	|	|
12+50	0.0144	0.03	Q V	|	|	|	|
12+55	0.0146	0.03	Q V	|	|	|	|
13+ 0	0.0149	0.04	Q V	|	|	|	|
13+ 5	0.0152	0.04	Q V	|	|	|	|
13+10	0.0154	0.04	Q V	|	|	|	|
13+15	0.0157	0.04	Q V	|	|	|	|
13+20	0.0160	0.04	Q V	|	|	|	|
13+25	0.0163	0.04	Q V	|	|	|	|
13+30	0.0166	0.04	Q V	|	|	|	|
13+35	0.0168	0.03	Q V	|	|	|	|
13+40	0.0170	0.03	Q V	|	|	|	|
13+45	0.0172	0.03	Q V	|	|	|	|
13+50	0.0174	0.03	Q V	|	|	|	|
13+55	0.0176	0.03	Q V	|	|	|	|
14+ 0	0.0178	0.03	Q V	|	|	|	|
14+ 5	0.0180	0.03	Q V	|	|	|	|
14+10	0.0182	0.03	Q V	|	|	|	|
14+15	0.0184	0.03	Q V	|	|	|	|
14+20	0.0186	0.03	Q V	|	|	|	|
14+25	0.0189	0.03	Q V	|	|	|	|

14+30	0.0191	0.03	Q	V				
14+35	0.0193	0.03	Q	V				
14+40	0.0195	0.03	Q	V				
14+45	0.0197	0.03	Q	V				
14+50	0.0199	0.03	Q	V				
14+55	0.0201	0.03	Q	V				
15+ 0	0.0203	0.03	Q	V				
15+ 5	0.0205	0.03	Q	V				
15+10	0.0207	0.03	Q	V				
15+15	0.0209	0.03	Q	V				
15+20	0.0211	0.03	Q	V				
15+25	0.0213	0.03	Q	V				
15+30	0.0215	0.03	Q	V				
15+35	0.0217	0.02	Q	V				
15+40	0.0219	0.02	Q	V				
15+45	0.0220	0.02	Q	V				
15+50	0.0222	0.02	Q	V				
15+55	0.0223	0.02	Q	V				
16+ 0	0.0225	0.02	Q	V				
16+ 5	0.0226	0.01	Q	V				
16+10	0.0226	0.01	Q	V				
16+15	0.0226	0.00	Q	V				
16+20	0.0227	0.00	Q	V				
16+25	0.0227	0.00	Q	V				
16+30	0.0227	0.00	Q	V				
16+35	0.0228	0.00	Q	V				
16+40	0.0228	0.00	Q	V				
16+45	0.0228	0.00	Q	V				
16+50	0.0228	0.00	Q	V				
16+55	0.0229	0.00	Q	V				
17+ 0	0.0229	0.00	Q	V				
17+ 5	0.0229	0.01	Q	V				
17+10	0.0230	0.01	Q	V				
17+15	0.0230	0.01	Q	V				
17+20	0.0231	0.01	Q	V				
17+25	0.0231	0.01	Q	V				
17+30	0.0231	0.01	Q	V				
17+35	0.0232	0.01	Q	V				
17+40	0.0232	0.01	Q	V				
17+45	0.0233	0.01	Q	V				
17+50	0.0233	0.01	Q	V				
17+55	0.0233	0.00	Q	V				
18+ 0	0.0234	0.00	Q	V				
18+ 5	0.0234	0.00	Q	V				
18+10	0.0234	0.00	Q	V				
18+15	0.0235	0.00	Q	V				
18+20	0.0235	0.00	Q	V				
18+25	0.0235	0.00	Q	V				
18+30	0.0236	0.00	Q	V				
18+35	0.0236	0.00	Q	V				
18+40	0.0236	0.00	Q	V				
18+45	0.0236	0.00	Q	V				
18+50	0.0237	0.00	Q	V				
18+55	0.0237	0.00	Q	V				
19+ 0	0.0237	0.00	Q	V				
19+ 5	0.0237	0.00	Q	V				
19+10	0.0237	0.00	Q	V				
19+15	0.0238	0.00	Q	V				
19+20	0.0238	0.00	Q	V				
19+25	0.0238	0.00	Q	V				
19+30	0.0239	0.00	Q	V				
19+35	0.0239	0.00	Q	V				
19+40	0.0239	0.00	Q	V				
19+45	0.0239	0.00	Q	V				
19+50	0.0240	0.00	Q	V				
19+55	0.0240	0.00	Q	V				
20+ 0	0.0240	0.00	Q	V				
20+ 5	0.0240	0.00	Q	V				
20+10	0.0240	0.00	Q	V				
20+15	0.0241	0.00	Q	V				
20+20	0.0241	0.00	Q	V				

20+25	0.0241	0.00	Q	V	|	|	|	|
20+30	0.0241	0.00	Q	V	|	|	|	|
20+35	0.0242	0.00	Q	V	|	|	|	|
20+40	0.0242	0.00	Q	V	|	|	|	|
20+45	0.0242	0.00	Q	V	|	|	|	|
20+50	0.0242	0.00	Q	V	|	|	|	|
20+55	0.0243	0.00	Q	V	|	|	|	|
21+ 0	0.0243	0.00	Q	V	|	|	|	|
21+ 5	0.0243	0.00	Q	V	|	|	|	|
21+10	0.0243	0.00	Q	V	|	|	|	|
21+15	0.0243	0.00	Q	V	|	|	|	|
21+20	0.0244	0.00	Q	V	|	|	|	|
21+25	0.0244	0.00	Q	V	|	|	|	|
21+30	0.0244	0.00	Q	V	|	|	|	|
21+35	0.0244	0.00	Q	V	|	|	|	|
21+40	0.0244	0.00	Q	V	|	|	|	|
21+45	0.0245	0.00	Q	V	|	|	|	|
21+50	0.0245	0.00	Q	V	|	|	|	|
21+55	0.0245	0.00	Q	V	|	|	|	|
22+ 0	0.0245	0.00	Q	V	|	|	|	|
22+ 5	0.0245	0.00	Q	V	|	|	|	|
22+10	0.0246	0.00	Q	V	|	|	|	|
22+15	0.0246	0.00	Q	V	|	|	|	|
22+20	0.0246	0.00	Q	V	|	|	|	|
22+25	0.0246	0.00	Q	V	|	|	|	|
22+30	0.0246	0.00	Q	V	|	|	|	|
22+35	0.0247	0.00	Q	V	|	|	|	|
22+40	0.0247	0.00	Q	V	|	|	|	|
22+45	0.0247	0.00	Q	V	|	|	|	|
22+50	0.0247	0.00	Q	V	|	|	|	|
22+55	0.0247	0.00	Q	V	|	|	|	|
23+ 0	0.0247	0.00	Q	V	|	|	|	|
23+ 5	0.0248	0.00	Q	V	|	|	|	|
23+10	0.0248	0.00	Q	V	|	|	|	|
23+15	0.0248	0.00	Q	V	|	|	|	|
23+20	0.0248	0.00	Q	V	|	|	|	|
23+25	0.0248	0.00	Q	V	|	|	|	|
23+30	0.0248	0.00	Q	V	|	|	|	|
23+35	0.0249	0.00	Q	V	|	|	|	|
23+40	0.0249	0.00	Q	V	|	|	|	|
23+45	0.0249	0.00	Q	V	|	|	|	|
23+50	0.0249	0.00	Q	V	|	|	|	|
23+55	0.0249	0.00	Q	V	|	|	|	|
24+ 0	0.0249	0.00	Q	V	|	|	|	|
24+ 5	0.0250	0.00	Q	V	|	|	|	|
24+10	0.0250	0.00	Q	V	|	|	|	|
24+15	0.0250	0.00	Q	V	|	|	|	|
24+20	0.0250	0.00	Q	V	|	|	|	|
24+25	0.0251	0.00	Q	V	|	|	|	|
24+30	0.0251	0.00	Q	V	|	|	|	|
24+35	0.0251	0.00	Q	V	|	|	|	|
24+40	0.0252	0.00	Q	V	|	|	|	|
24+45	0.0252	0.00	Q	V	|	|	|	|
24+50	0.0252	0.01	Q	V	|	|	|	|
24+55	0.0253	0.01	Q	V	|	|	|	|
25+ 0	0.0253	0.01	Q	V	|	|	|	|
25+ 5	0.0253	0.01	Q	V	|	|	|	|
25+10	0.0254	0.00	Q	V	|	|	|	|
25+15	0.0254	0.00	Q	V	|	|	|	|
25+20	0.0254	0.00	Q	V	|	|	|	|
25+25	0.0255	0.00	Q	V	|	|	|	|
25+30	0.0255	0.00	Q	V	|	|	|	|
25+35	0.0255	0.00	Q	V	|	|	|	|
25+40	0.0256	0.00	Q	V	|	|	|	|
25+45	0.0256	0.00	Q	V	|	|	|	|
25+50	0.0256	0.01	Q	V	|	|	|	|
25+55	0.0257	0.01	Q	V	|	|	|	|
26+ 0	0.0257	0.01	Q	V	|	|	|	|
26+ 5	0.0258	0.01	Q	V	|	|	|	|
26+10	0.0258	0.01	Q	V	|	|	|	|
26+15	0.0258	0.01	Q	V	|	|	|	|

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26+20       0.0259      0.01  Q   V     |          |          |          |
26+25       0.0259      0.01  Q   V     |          |          |          |
26+30       0.0260      0.01  Q   V     |          |          |          |
26+35       0.0260      0.01  Q   V     |          |          |          |
26+40       0.0261      0.01  Q   V     |          |          |          |
26+45       0.0261      0.01  Q   V     |          |          |          |
26+50       0.0262      0.01  Q   V     |          |          |          |
26+55       0.0262      0.01  Q   V     |          |          |          |
27+ 0       0.0263      0.01  Q   V     |          |          |          |
27+ 5       0.0263      0.01  Q   V     |          |          |          |
27+10       0.0264      0.01  Q   V     |          |          |          |
27+15       0.0264      0.01  Q   V     |          |          |          |
27+20       0.0265      0.01  Q   V     |          |          |          |
27+25       0.0265      0.01  Q   V     |          |          |          |
27+30       0.0266      0.01  Q   V     |          |          |          |
27+35       0.0267      0.01  Q   V     |          |          |          |
27+40       0.0267      0.01  Q   V     |          |          |          |
27+45       0.0268      0.01  Q   V     |          |          |          |
27+50       0.0268      0.01  Q   V     |          |          |          |
27+55       0.0269      0.01  Q   V     |          |          |          |
28+ 0       0.0269      0.01  Q   V     |          |          |          |
28+ 5       0.0270      0.01  Q   V     |          |          |          |
28+10       0.0271      0.01  Q   V     |          |          |          |
28+15       0.0271      0.01  Q   V     |          |          |          |
28+20       0.0272      0.01  Q   V     |          |          |          |
28+25       0.0273      0.01  Q   V     |          |          |          |
28+30       0.0273      0.01  Q   V     |          |          |          |
28+35       0.0274      0.01  Q   V     |          |          |          |
28+40       0.0275      0.01  Q   V     |          |          |          |
28+45       0.0276      0.01  Q   V     |          |          |          |
28+50       0.0276      0.01  Q   V     |          |          |          |
28+55       0.0277      0.01  Q   V     |          |          |          |
29+ 0       0.0278      0.01  Q   V     |          |          |          |
29+ 5       0.0279      0.01  Q   V     |          |          |          |
29+10       0.0280      0.01  Q   V     |          |          |          |
29+15       0.0280      0.01  Q   V     |          |          |          |
29+20       0.0281      0.01  Q   V     |          |          |          |
29+25       0.0282      0.01  Q   V     |          |          |          |
29+30       0.0282      0.01  Q   V     |          |          |          |
29+35       0.0283      0.01  Q   V     |          |          |          |
29+40       0.0284      0.01  Q   V     |          |          |          |
29+45       0.0285      0.01  Q   V     |          |          |          |
29+50       0.0286      0.01  Q   V     |          |          |          |
29+55       0.0286      0.01  Q   V     |          |          |          |
30+ 0       0.0287      0.01  Q   V     |          |          |          |
30+ 5       0.0288      0.01  Q   V     |          |          |          |
30+10       0.0289      0.01  Q   V     |          |          |          |
30+15       0.0290      0.01  Q   V     |          |          |          |
30+20       0.0291      0.01  Q    V    |          |          |          |
30+25       0.0292      0.01  Q    V    |          |          |          |
30+30       0.0293      0.01  Q    V    |          |          |          |
30+35       0.0294      0.01  Q    V    |          |          |          |
30+40       0.0295      0.02  Q    V    |          |          |          |
30+45       0.0296      0.02  Q    V    |          |          |          |
30+50       0.0297      0.02  Q    V    |          |          |          |
30+55       0.0298      0.02  Q    V    |          |          |          |
31+ 0       0.0299      0.02  Q    V    |          |          |          |
31+ 5       0.0300      0.02  Q    V    |          |          |          |
31+10       0.0301      0.02  Q    V    |          |          |          |
31+15       0.0302      0.02  Q    V    |          |          |          |
31+20       0.0304      0.02  Q    V    |          |          |          |
31+25       0.0305      0.02  Q    V    |          |          |          |
31+30       0.0306      0.02  Q    V    |          |          |          |
31+35       0.0307      0.02  Q    V    |          |          |          |
31+40       0.0308      0.02  Q    V    |          |          |          |
31+45       0.0310      0.02  Q    V    |          |          |          |
31+50       0.0311      0.02  Q    V    |          |          |          |
31+55       0.0312      0.02  Q    V    |          |          |          |
32+ 0       0.0314      0.02  Q    V    |          |          |          |
32+ 5       0.0315      0.02  Q    V    |          |          |          |
32+10       0.0317      0.02  Q    V    |          |          |          |
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32+15       0.0318      0.02  Q    V    |          |          |          |
32+20       0.0320      0.02  Q    V    |          |          |          |
32+25       0.0321      0.02  Q    V    |          |          |          |
32+30       0.0323      0.02  Q    V    |          |          |          |
32+35       0.0325      0.02  Q    V    |          |          |          |
32+40       0.0326      0.02  Q    V    |          |          |          |
32+45       0.0328      0.02  Q    V    |          |          |          |
32+50       0.0330      0.03  Q    V    |          |          |          |
32+55       0.0332      0.03  Q    V    |          |          |          |
33+ 0       0.0333      0.03  Q    V    |          |          |          |
33+ 5       0.0335      0.03  Q    V    |          |          |          |
33+10       0.0337      0.03  Q    V    |          |          |          |
33+15       0.0339      0.03  Q    V    |          |          |          |
33+20       0.0341      0.03  Q    V    |          |          |          |
33+25       0.0343      0.03  Q    V    |          |          |          |
33+30       0.0346      0.03  Q    V    |          |          |          |
33+35       0.0348      0.03  Q    V    |          |          |          |
33+40       0.0350      0.03  Q     V   |          |          |          |
33+45       0.0352      0.03  Q     V   |          |          |          |
33+50       0.0354      0.03  Q     V   |          |          |          |
33+55       0.0357      0.03  Q     V   |          |          |          |
34+ 0       0.0359      0.03  Q     V   |          |          |          |
34+ 5       0.0361      0.03  Q     V   |          |          |          |
34+10       0.0363      0.02  Q     V   |          |          |          |
34+15       0.0364      0.02  Q     V   |          |          |          |
34+20       0.0366      0.02  Q     V   |          |          |          |
34+25       0.0367      0.02  Q     V   |          |          |          |
34+30       0.0369      0.02  Q     V   |          |          |          |
34+35       0.0371      0.03  Q     V   |          |          |          |
34+40       0.0373      0.03  Q     V   |          |          |          |
34+45       0.0375      0.03  Q     V   |          |          |          |
34+50       0.0377      0.03  Q     V   |          |          |          |
34+55       0.0379      0.03  Q     V   |          |          |          |
35+ 0       0.0381      0.03  Q     V   |          |          |          |
35+ 5       0.0383      0.03  Q     V   |          |          |          |
35+10       0.0385      0.03  Q     V   |          |          |          |
35+15       0.0387      0.03  Q     V   |          |          |          |
35+20       0.0389      0.03  Q     V   |          |          |          |
35+25       0.0391      0.03  Q     V   |          |          |          |
35+30       0.0393      0.03  Q     V   |          |          |          |
35+35       0.0395      0.03  Q     V   |          |          |          |
35+40       0.0397      0.03  Q     V   |          |          |          |
35+45       0.0399      0.03  Q     V   |          |          |          |
35+50       0.0401      0.03  Q     V   |          |          |          |
35+55       0.0403      0.03  Q     V   |          |          |          |
36+ 0       0.0404      0.03  Q     V   |          |          |          |
36+ 5       0.0407      0.03  Q     V   |          |          |          |
36+10       0.0409      0.04  Q      V  |          |          |          |
36+15       0.0412      0.04  Q      V  |          |          |          |
36+20       0.0415      0.04  Q      V  |          |          |          |
36+25       0.0417      0.04  Q      V  |          |          |          |
36+30       0.0420      0.04  Q      V  |          |          |          |
36+35       0.0423      0.04  Q      V  |          |          |          |
36+40       0.0426      0.04  Q      V  |          |          |          |
36+45       0.0429      0.04  Q      V  |          |          |          |
36+50       0.0432      0.04  Q      V  |          |          |          |
36+55       0.0435      0.04  Q      V  |          |          |          |
37+ 0       0.0438      0.04  Q      V  |          |          |          |
37+ 5       0.0441      0.05  Q      V  |          |          |          |
37+10       0.0445      0.05  Q      V  |          |          |          |
37+15       0.0449      0.05  Q      V  |          |          |          |
37+20       0.0452      0.05  Q      V  |          |          |          |
37+25       0.0456      0.05  Q      V  |          |          |          |
37+30       0.0459      0.05  Q      V  |          |          |          |
37+35       0.0462      0.04  Q      V  |          |          |          |
37+40       0.0465      0.04  Q      V  |          |          |          |
37+45       0.0467      0.04  Q       V |          |          |          |
37+50       0.0470      0.04  Q       V |          |          |          |
37+55       0.0472      0.04  Q       V |          |          |          |
38+ 0       0.0474      0.04  Q       V |          |          |          |
38+ 5       0.0477      0.04  Q       V |          |          |          |
```

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38+10       0.0480      0.04  Q       V |          |          |          |
38+15       0.0483      0.04  Q       V |          |          |          |
38+20       0.0486      0.04  Q       V |          |          |          |
38+25       0.0488      0.04  Q       V |          |          |          |
38+30       0.0491      0.04  Q       V |          |          |          |
38+35       0.0494      0.04  Q       V |          |          |          |
38+40       0.0496      0.04  Q       V |          |          |          |
38+45       0.0499      0.04  Q       V |          |          |          |
38+50       0.0502      0.04  Q       V |          |          |          |
38+55       0.0505      0.04  Q       V |          |          |          |
39+ 0       0.0507      0.04  Q       V |          |          |          |
39+ 5       0.0510      0.04  Q       V |          |          |          |
39+10       0.0512      0.04  Q       V |          |          |          |
39+15       0.0515      0.04  Q       V |          |          |          |
39+20       0.0517      0.04  Q       V |          |          |          |
39+25       0.0520      0.04  Q       V |          |          |          |
39+30       0.0522      0.04  Q       V |          |          |          |
39+35       0.0524      0.03  Q        V|          |          |          |
39+40       0.0526      0.03  Q        V|          |          |          |
39+45       0.0528      0.03  Q        V|          |          |          |
39+50       0.0530      0.03  Q        V|          |          |          |
39+55       0.0532      0.03  Q        V|          |          |          |
40+ 0       0.0534      0.03  Q        V|          |          |          |
40+ 5       0.0535      0.02  Q        V|          |          |          |
40+10       0.0536      0.01  Q        V|          |          |          |
40+15       0.0536      0.01  Q        V|          |          |          |
40+20       0.0537      0.01  Q        V|          |          |          |
40+25       0.0537      0.01  Q        V|          |          |          |
40+30       0.0538      0.01  Q        V|          |          |          |
40+35       0.0538      0.01  Q        V|          |          |          |
40+40       0.0538      0.00  Q        V|          |          |          |
40+45       0.0539      0.00  Q        V|          |          |          |
40+50       0.0539      0.00  Q        V|          |          |          |
40+55       0.0539      0.00  Q        V|          |          |          |
41+ 0       0.0539      0.00  Q        V|          |          |          |
41+ 5       0.0540      0.01  Q        V|          |          |          |
41+10       0.0540      0.01  Q        V|          |          |          |
41+15       0.0541      0.01  Q        V|          |          |          |
41+20       0.0541      0.01  Q        V|          |          |          |
41+25       0.0542      0.01  Q        V|          |          |          |
41+30       0.0543      0.01  Q        V|          |          |          |
41+35       0.0543      0.01  Q        V|          |          |          |
41+40       0.0544      0.01  Q        V|          |          |          |
41+45       0.0544      0.01  Q        V|          |          |          |
41+50       0.0545      0.01  Q        V|          |          |          |
41+55       0.0545      0.01  Q        V|          |          |          |
42+ 0       0.0545      0.01  Q        V|          |          |          |
42+ 5       0.0546      0.01  Q        V|          |          |          |
42+10       0.0546      0.01  Q        V|          |          |          |
42+15       0.0547      0.01  Q        V|          |          |          |
42+20       0.0547      0.01  Q        V|          |          |          |
42+25       0.0548      0.01  Q        V|          |          |          |
42+30       0.0548      0.01  Q        V|          |          |          |
42+35       0.0548      0.01  Q        V|          |          |          |
42+40       0.0549      0.00  Q        V|          |          |          |
42+45       0.0549      0.00  Q        V|          |          |          |
42+50       0.0549      0.00  Q        V|          |          |          |
42+55       0.0549      0.00  Q        V|          |          |          |
43+ 0       0.0550      0.00  Q        V|          |          |          |
43+ 5       0.0550      0.00  Q        V|          |          |          |
43+10       0.0550      0.00  Q        V|          |          |          |
43+15       0.0551      0.00  Q        V|          |          |          |
43+20       0.0551      0.01  Q        V|          |          |          |
43+25       0.0551      0.01  Q        V|          |          |          |
43+30       0.0552      0.01  Q        V|          |          |          |
43+35       0.0552      0.01  Q        V|          |          |          |
43+40       0.0552      0.00  Q        V|          |          |          |
43+45       0.0553      0.00  Q        V|          |          |          |
43+50       0.0553      0.00  Q        V|          |          |          |
43+55       0.0553      0.00  Q        V|          |          |          |
44+ 0       0.0553      0.00  Q        V|          |          |          |
```

44+ 5	0.0554	0.00	Q	V			
44+10	0.0554	0.00	Q	V			
44+15	0.0554	0.00	Q	V			
44+20	0.0555	0.00	Q	V			
44+25	0.0555	0.00	Q	V			
44+30	0.0555	0.00	Q	V			
44+35	0.0556	0.00	Q	V			
44+40	0.0556	0.00	Q	V			
44+45	0.0556	0.00	Q	V			
44+50	0.0556	0.00	Q	V			
44+55	0.0557	0.00	Q	V			
45+ 0	0.0557	0.00	Q	V			
45+ 5	0.0557	0.00	Q	V			
45+10	0.0557	0.00	Q	V			
45+15	0.0558	0.00	Q	V			
45+20	0.0558	0.00	Q	V			
45+25	0.0558	0.00	Q	V			
45+30	0.0558	0.00	Q	V			
45+35	0.0559	0.00	Q	V			
45+40	0.0559	0.00	Q	V			
45+45	0.0559	0.00	Q	V			
45+50	0.0560	0.00	Q	V			
45+55	0.0560	0.00	Q	V			
46+ 0	0.0560	0.00	Q	V			
46+ 5	0.0560	0.00	Q	V			
46+10	0.0561	0.00	Q	V			
46+15	0.0561	0.00	Q	V			
46+20	0.0561	0.00	Q	V			
46+25	0.0561	0.00	Q	V			
46+30	0.0562	0.00	Q	V			
46+35	0.0562	0.00	Q	V			
46+40	0.0562	0.00	Q	V			
46+45	0.0562	0.00	Q	V			
46+50	0.0562	0.00	Q	V			
46+55	0.0563	0.00	Q	V			
47+ 0	0.0563	0.00	Q	V			
47+ 5	0.0563	0.00	Q	V			
47+10	0.0563	0.00	Q	V			
47+15	0.0564	0.00	Q	V			
47+20	0.0564	0.00	Q	V			
47+25	0.0564	0.00	Q	V			
47+30	0.0564	0.00	Q	V			
47+35	0.0564	0.00	Q	V			
47+40	0.0565	0.00	Q	V			
47+45	0.0565	0.00	Q	V			
47+50	0.0565	0.00	Q	V			
47+55	0.0565	0.00	Q	V			
48+ 0	0.0565	0.00	Q	V			
48+ 5	0.0566	0.00	Q	V			
48+10	0.0566	0.01	Q	V			
48+15	0.0566	0.01	Q	V			
48+20	0.0567	0.01	Q	V			
48+25	0.0568	0.01	Q	V			
48+30	0.0568	0.01	Q	V			
48+35	0.0569	0.01	Q	V			
48+40	0.0569	0.01	Q	V			
48+45	0.0570	0.01	Q	V			
48+50	0.0571	0.01	Q	V			
48+55	0.0571	0.01	Q	V			
49+ 0	0.0572	0.01	Q	V			
49+ 5	0.0573	0.01	Q	V			
49+10	0.0574	0.01	Q	V			
49+15	0.0574	0.01	Q	V			
49+20	0.0575	0.01	Q	V			
49+25	0.0575	0.01	Q	V			
49+30	0.0576	0.01	Q	V			
49+35	0.0577	0.01	Q	V			
49+40	0.0577	0.01	Q	V			
49+45	0.0578	0.01	Q	V			
49+50	0.0578	0.01	Q	V			
49+55	0.0579	0.01	Q	V			

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50+ 0       0.0580      0.01  Q        V|         |         |         |
50+ 5       0.0581      0.01  Q        V|         |         |         |
50+10       0.0582      0.01  Q        V|         |         |         |
50+15       0.0582      0.01  Q         V         |         |         |
50+20       0.0583      0.01  Q         V         |         |         |
50+25       0.0584      0.01  Q         V         |         |         |
50+30       0.0585      0.01  Q         V         |         |         |
50+35       0.0586      0.01  Q         V         |         |         |
50+40       0.0587      0.01  Q         V         |         |         |
50+45       0.0588      0.01  Q         V         |         |         |
50+50       0.0589      0.01  Q         V         |         |         |
50+55       0.0590      0.01  Q         V         |         |         |
51+ 0       0.0591      0.01  Q         V         |         |         |
51+ 5       0.0592      0.01  Q         V         |         |         |
51+10       0.0593      0.01  Q         V         |         |         |
51+15       0.0594      0.01  Q         V         |         |         |
51+20       0.0595      0.01  Q         V         |         |         |
51+25       0.0596      0.01  Q         V         |         |         |
51+30       0.0597      0.01  Q         V         |         |         |
51+35       0.0598      0.01  Q         V         |         |         |
51+40       0.0599      0.01  Q         V         |         |         |
51+45       0.0600      0.01  Q         V         |         |         |
51+50       0.0601      0.02  Q         V         |         |         |
51+55       0.0602      0.02  Q         V         |         |         |
52+ 0       0.0603      0.02  Q         V         |         |         |
52+ 5       0.0604      0.02  Q         V         |         |         |
52+10       0.0606      0.02  Q         V         |         |         |
52+15       0.0607      0.02  Q         V         |         |         |
52+20       0.0608      0.02  Q         V         |         |         |
52+25       0.0610      0.02  Q         V         |         |         |
52+30       0.0611      0.02  Q         V         |         |         |
52+35       0.0612      0.02  Q         V         |         |         |
52+40       0.0614      0.02  Q         V         |         |         |
52+45       0.0615      0.02  Q         V         |         |         |
52+50       0.0617      0.02  Q         V         |         |         |
52+55       0.0618      0.02  Q         V         |         |         |
53+ 0       0.0620      0.02  Q         V         |         |         |
53+ 5       0.0621      0.02  Q         V         |         |         |
53+10       0.0622      0.02  Q         V         |         |         |
53+15       0.0624      0.02  Q         V         |         |         |
53+20       0.0625      0.02  Q         V         |         |         |
53+25       0.0626      0.02  Q         V         |         |         |
53+30       0.0628      0.02  Q         V         |         |         |
53+35       0.0629      0.02  Q         V         |         |         |
53+40       0.0631      0.02  Q         V         |         |         |
53+45       0.0632      0.02  Q         V         |         |         |
53+50       0.0634      0.02  Q         V         |         |         |
53+55       0.0636      0.02  Q         V         |         |         |
54+ 0       0.0637      0.02  Q         V         |         |         |
54+ 5       0.0639      0.02  Q         V         |         |         |
54+10       0.0641      0.03  Q         |V        |         |         |
54+15       0.0642      0.03  Q         |V        |         |         |
54+20       0.0644      0.03  Q         |V        |         |         |
54+25       0.0646      0.03  Q         |V        |         |         |
54+30       0.0648      0.03  Q         |V        |         |         |
54+35       0.0650      0.03  Q         |V        |         |         |
54+40       0.0652      0.03  Q         |V        |         |         |
54+45       0.0654      0.03  Q         |V        |         |         |
54+50       0.0656      0.03  Q         |V        |         |         |
54+55       0.0658      0.03  Q         |V        |         |         |
55+ 0       0.0660      0.03  Q         |V        |         |         |
55+ 5       0.0662      0.03  Q         |V        |         |         |
55+10       0.0664      0.03  Q         |V        |         |         |
55+15       0.0666      0.03  Q         |V        |         |         |
55+20       0.0668      0.03  Q         |V        |         |         |
55+25       0.0670      0.03  Q         |V        |         |         |
55+30       0.0672      0.03  Q         |V        |         |         |
55+35       0.0675      0.03  Q         |V        |         |         |
55+40       0.0677      0.03  Q         |V        |         |         |
55+45       0.0679      0.03  Q         |V        |         |         |
55+50       0.0682      0.04  Q         |V        |         |         |
```

```
55+55       0.0684      0.04  Q          |V         |          |          |
56+ 0       0.0687      0.04  Q          |V         |          |          |
56+ 5       0.0690      0.04  Q          |V         |          |          |
56+10       0.0693      0.04  Q          |V         |          |          |
56+15       0.0696      0.04  Q          |V         |          |          |
56+20       0.0699      0.04  Q          | V        |          |          |
56+25       0.0702      0.04  Q          | V        |          |          |
56+30       0.0705      0.04  Q          | V        |          |          |
56+35       0.0708      0.05  Q          | V        |          |          |
56+40       0.0711      0.05  Q          | V        |          |          |
56+45       0.0714      0.05  Q          | V        |          |          |
56+50       0.0718      0.05  Q          | V        |          |          |
56+55       0.0721      0.05  Q          | V        |          |          |
57+ 0       0.0724      0.05  Q          | V        |          |          |
57+ 5       0.0728      0.05  Q          | V        |          |          |
57+10       0.0732      0.05  Q          | V        |          |          |
57+15       0.0736      0.06  Q          | V        |          |          |
57+20       0.0740      0.06  Q          | V        |          |          |
57+25       0.0744      0.06  Q          | V        |          |          |
57+30       0.0748      0.06  Q          | V        |          |          |
57+35       0.0752      0.06  Q          | V        |          |          |
57+40       0.0756      0.06  Q          | V        |          |          |
57+45       0.0760      0.06  Q          |  V       |          |          |
57+50       0.0764      0.06  Q          |  V       |          |          |
57+55       0.0769      0.06  Q          |  V       |          |          |
58+ 0       0.0773      0.06  Q          |  V       |          |          |
58+ 5       0.0777      0.05  Q          |  V       |          |          |
58+10       0.0780      0.04  Q          |  V       |          |          |
58+15       0.0783      0.04  Q          |  V       |          |          |
58+20       0.0786      0.04  Q          |  V       |          |          |
58+25       0.0789      0.04  Q          |  V       |          |          |
58+30       0.0792      0.04  Q          |  V       |          |          |
58+35       0.0795      0.05  Q          |  V       |          |          |
58+40       0.0799      0.06  Q          |  V       |          |          |
58+45       0.0803      0.06  Q          |  V       |          |          |
58+50       0.0807      0.06  Q          |  V       |          |          |
58+55       0.0811      0.06  Q          |  V       |          |          |
59+ 0       0.0815      0.06  Q          |   V      |          |          |
59+ 5       0.0819      0.06  Q          |   V      |          |          |
59+10       0.0823      0.06  Q          |   V      |          |          |
59+15       0.0827      0.06  Q          |   V      |          |          |
59+20       0.0830      0.06  Q          |   V      |          |          |
59+25       0.0834      0.06  Q          |   V      |          |          |
59+30       0.0838      0.06  Q          |   V      |          |          |
59+35       0.0842      0.05  Q          |   V      |          |          |
59+40       0.0845      0.05  Q          |   V      |          |          |
59+45       0.0848      0.05  Q          |   V      |          |          |
59+50       0.0852      0.05  Q          |   V      |          |          |
59+55       0.0855      0.05  Q          |   V      |          |          |
60+ 0       0.0859      0.05  Q          |   V      |          |          |
60+ 5       0.0864      0.06  Q          |   V      |          |          |
60+10       0.0868      0.07  Q          |   V      |          |          |
60+15       0.0873      0.07  Q          |    V     |          |          |
60+20       0.0879      0.07  Q          |    V     |          |          |
60+25       0.0884      0.08  Q          |    V     |          |          |
60+30       0.0889      0.08  Q          |    V     |          |          |
60+35       0.0894      0.08  Q          |    V     |          |          |
60+40       0.0900      0.08  Q          |    V     |          |          |
60+45       0.0906      0.08  Q          |    V     |          |          |
60+50       0.0911      0.08  Q          |    V     |          |          |
60+55       0.0917      0.08  Q          |    V     |          |          |
61+ 0       0.0923      0.08  Q          |    V     |          |          |
61+ 5       0.0929      0.09  Q          |    V     |          |          |
61+10       0.0932      0.04  Q          |     V    |          |          |
61+15       0.0932      0.01  Q          |     V    |          |          |
61+20       0.0932      0.00  Q          |     V    |          |          |
61+25       0.0933      0.00  Q          |     V    |          |          |
61+30       0.0933      0.00  Q          |     V    |          |          |
61+35       0.0936      0.04  Q          |     V    |          |          |
61+40       0.0940      0.06  Q          |     V    |          |          |
61+45       0.0945      0.07  Q          |     V    |          |          |
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61+50       0.0949      0.07  Q          |     V   |          |          |
61+55       0.0954      0.07  Q          |     V   |          |          |
62+ 0       0.0958      0.07  Q          |     V   |          |          |
62+ 5       0.0963      0.07  Q          |     V   |          |          |
62+10       0.0969      0.08  Q          |     V   |          |          |
62+15       0.0974      0.08  Q          |     V   |          |          |
62+20       0.0979      0.08  Q          |     V   |          |          |
62+25       0.0985      0.08  Q          |     V   |          |          |
62+30       0.0990      0.08  Q          |      V  |          |          |
62+35       0.0995      0.08  Q          |      V  |          |          |
62+40       0.1000      0.08  Q          |      V  |          |          |
62+45       0.1005      0.08  Q          |      V  |          |          |
62+50       0.1010      0.07  Q          |      V  |          |          |
62+55       0.1015      0.07  Q          |      V  |          |          |
63+ 0       0.1020      0.07  Q          |      V  |          |          |
63+ 5       0.1025      0.07  Q          |      V  |          |          |
63+10       0.1030      0.07  Q          |      V  |          |          |
63+15       0.1035      0.07  Q          |      V  |          |          |
63+20       0.1040      0.07  Q          |      V  |          |          |
63+25       0.1044      0.07  Q          |      V  |          |          |
63+30       0.1049      0.07  Q          |       V |          |          |
63+35       0.1053      0.06  Q          |       V |          |          |
63+40       0.1057      0.06  Q          |       V |          |          |
63+45       0.1061      0.06  Q          |       V |          |          |
63+50       0.1064      0.06  Q          |       V |          |          |
63+55       0.1068      0.06  Q          |       V |          |          |
64+ 0       0.1072      0.06  Q          |       V |          |          |
64+ 5       0.1074      0.03  Q          |       V |          |          |
64+10       0.1075      0.01  Q          |       V |          |          |
64+15       0.1076      0.01  Q          |       V |          |          |
64+20       0.1076      0.01  Q          |       V |          |          |
64+25       0.1077      0.01  Q          |       V |          |          |
64+30       0.1078      0.01  Q          |       V |          |          |
64+35       0.1079      0.01  Q          |       V |          |          |
64+40       0.1079      0.01  Q          |       V |          |          |
64+45       0.1080      0.01  Q          |       V |          |          |
64+50       0.1081      0.01  Q          |       V |          |          |
64+55       0.1081      0.01  Q          |       V |          |          |
65+ 0       0.1082      0.01  Q          |       V |          |          |
65+ 5       0.1083      0.01  Q          |       V |          |          |
65+10       0.1084      0.01  Q          |       V |          |          |
65+15       0.1085      0.01  Q          |       V |          |          |
65+20       0.1086      0.01  Q          |       V |          |          |
65+25       0.1087      0.01  Q          |       V |          |          |
65+30       0.1088      0.01  Q          |       V |          |          |
65+35       0.1089      0.01  Q          |       V |          |          |
65+40       0.1090      0.01  Q          |       V |          |          |
65+45       0.1091      0.01  Q          |       V |          |          |
65+50       0.1091      0.01  Q          |       V |          |          |
65+55       0.1092      0.01  Q          |       V |          |          |
66+ 0       0.1093      0.01  Q          |       V |          |          |
66+ 5       0.1094      0.01  Q          |       V |          |          |
66+10       0.1095      0.01  Q          |       V |          |          |
66+15       0.1095      0.01  Q          |       V |          |          |
66+20       0.1096      0.01  Q          |       V |          |          |
66+25       0.1097      0.01  Q          |       V |          |          |
66+30       0.1098      0.01  Q          |       V |          |          |
66+35       0.1098      0.01  Q          |       V |          |          |
66+40       0.1099      0.01  Q          |       V |          |          |
66+45       0.1100      0.01  Q          |       V |          |          |
66+50       0.1100      0.01  Q          |       V |          |          |
66+55       0.1101      0.01  Q          |       V |          |          |
67+ 0       0.1101      0.01  Q          |       V |          |          |
67+ 5       0.1101      0.01  Q          |       V |          |          |
67+10       0.1102      0.01  Q          |       V |          |          |
67+15       0.1103      0.01  Q          |       V |          |          |
67+20       0.1103      0.01  Q          |       V |          |          |
67+25       0.1104      0.01  Q          |       V |          |          |
67+30       0.1105      0.01  Q          |       V |          |          |
67+35       0.1106      0.01  Q          |        V|          |          |
67+40       0.1106      0.01  Q          |        V|          |          |
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67+45	0.1107	0.01	Q	|	V|	|	|
67+50	0.1107	0.01	Q	|	V|	|	|
67+55	0.1108	0.01	Q	|	V|	|	|
68+ 0	0.1108	0.01	Q	|	V|	|	|
68+ 5	0.1109	0.01	Q	|	V|	|	|
68+10	0.1109	0.01	Q	|	V|	|	|
68+15	0.1110	0.01	Q	|	V|	|	|
68+20	0.1110	0.01	Q	|	V|	|	|
68+25	0.1111	0.01	Q	|	V|	|	|
68+30	0.1112	0.01	Q	|	V|	|	|
68+35	0.1112	0.01	Q	|	V|	|	|
68+40	0.1113	0.01	Q	|	V|	|	|
68+45	0.1113	0.01	Q	|	V|	|	|
68+50	0.1114	0.01	Q	|	V|	|	|
68+55	0.1114	0.01	Q	|	V|	|	|
69+ 0	0.1115	0.01	Q	|	V|	|	|
69+ 5	0.1115	0.01	Q	|	V|	|	|
69+10	0.1116	0.01	Q	|	V|	|	|
69+15	0.1116	0.01	Q	|	V|	|	|
69+20	0.1117	0.01	Q	|	V|	|	|
69+25	0.1117	0.01	Q	|	V|	|	|
69+30	0.1118	0.01	Q	|	V|	|	|
69+35	0.1118	0.01	Q	|	V|	|	|
69+40	0.1119	0.01	Q	|	V|	|	|
69+45	0.1119	0.01	Q	|	V|	|	|
69+50	0.1120	0.01	Q	|	V|	|	|
69+55	0.1120	0.01	Q	|	V|	|	|
70+ 0	0.1121	0.01	Q	|	V|	|	|
70+ 5	0.1121	0.01	Q	|	V|	|	|
70+10	0.1122	0.01	Q	|	V|	|	|
70+15	0.1122	0.01	Q	|	V|	|	|
70+20	0.1123	0.01	Q	|	V|	|	|
70+25	0.1123	0.01	Q	|	V|	|	|
70+30	0.1124	0.01	Q	|	V|	|	|
70+35	0.1124	0.01	Q	|	V|	|	|
70+40	0.1125	0.01	Q	|	V|	|	|
70+45	0.1125	0.01	Q	|	V|	|	|
70+50	0.1125	0.01	Q	|	V|	|	|
70+55	0.1126	0.01	Q	|	V|	|	|
71+ 0	0.1126	0.01	Q	|	V|	|	|
71+ 5	0.1127	0.01	Q	|	V|	|	|
71+10	0.1127	0.01	Q	|	V|	|	|
71+15	0.1127	0.01	Q	|	V|	|	|
71+20	0.1128	0.01	Q	|	V|	|	|
71+25	0.1128	0.01	Q	|	V|	|	|
71+30	0.1129	0.01	Q	|	V|	|	|
71+35	0.1129	0.01	Q	|	V|	|	|
71+40	0.1129	0.01	Q	|	V|	|	|
71+45	0.1130	0.01	Q	|	V|	|	|
71+50	0.1130	0.01	Q	|	V|	|	|
71+55	0.1130	0.01	Q	|	V|	|	|
72+ 0	0.1131	0.01	Q	|	V|	|	|
72+ 5	0.1132	0.01	Q	|	V|	|	|
72+10	0.1133	0.02	Q	|	V|	|	|
72+15	0.1134	0.02	Q	|	V|	|	|
72+20	0.1135	0.02	Q	|	V|	|	|
72+25	0.1137	0.02	Q	|	V|	|	|
72+30	0.1138	0.02	Q	|	V|	|	|
72+35	0.1140	0.02	Q	|	V|	|	|
72+40	0.1142	0.02	Q	|	V|	|	|
72+45	0.1143	0.02	Q	|	V|	|	|
72+50	0.1145	0.03	Q	|	V|	|	|
72+55	0.1148	0.03	Q	|	V|	|	|
73+ 0	0.1150	0.03	Q	|	V|	|	|
73+ 5	0.1152	0.03	Q	|	V|	|	|
73+10	0.1153	0.02	Q	|	V|	|	|
73+15	0.1155	0.02	Q	|	V|	|	|
73+20	0.1157	0.02	Q	|	V|	|	|
73+25	0.1158	0.02	Q	|	V|	|	|
73+30	0.1160	0.02	Q	|	V|	|	|
73+35	0.1162	0.02	Q	|	V|	|	|

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73+40       0.1163      0.02  Q          |         V|          |          |
73+45       0.1165      0.02  Q          |          V          |          |
73+50       0.1167      0.03  Q          |          V          |          |
73+55       0.1169      0.03  Q          |          V          |          |
74+ 0       0.1171      0.03  Q          |          V          |          |
74+ 5       0.1174      0.03  Q          |          V          |          |
74+10       0.1176      0.03  Q          |          V          |          |
74+15       0.1178      0.03  Q          |          V          |          |
74+20       0.1180      0.03  Q          |          V          |          |
74+25       0.1183      0.03  Q          |          V          |          |
74+30       0.1185      0.03  Q          |          V          |          |
74+35       0.1187      0.04  Q          |          V          |          |
74+40       0.1190      0.04  Q          |          V          |          |
74+45       0.1193      0.04  Q          |          V          |          |
74+50       0.1196      0.04  Q          |          V          |          |
74+55       0.1198      0.04  Q          |          V          |          |
75+ 0       0.1201      0.04  Q          |          V          |          |
75+ 5       0.1204      0.04  Q          |          V          |          |
75+10       0.1207      0.04  Q          |          V          |          |
75+15       0.1210      0.04  Q          |          V          |          |
75+20       0.1212      0.04  Q          |          V          |          |
75+25       0.1215      0.04  Q          |          V          |          |
75+30       0.1218      0.04  Q          |          V          |          |
75+35       0.1221      0.04  Q          |          V          |          |
75+40       0.1223      0.04  Q          |          |V         |          |
75+45       0.1226      0.04  Q          |          |V         |          |
75+50       0.1229      0.05  Q          |          |V         |          |
75+55       0.1233      0.05  Q          |          |V         |          |
76+ 0       0.1236      0.05  Q          |          |V         |          |
76+ 5       0.1239      0.05  Q          |          |V         |          |
76+10       0.1243      0.05  Q          |          |V         |          |
76+15       0.1246      0.05  Q          |          |V         |          |
76+20       0.1250      0.05  Q          |          |V         |          |
76+25       0.1253      0.06  Q          |          |V         |          |
76+30       0.1257      0.06  Q          |          |V         |          |
76+35       0.1261      0.06  Q          |          |V         |          |
76+40       0.1265      0.06  Q          |          |V         |          |
76+45       0.1269      0.06  Q          |          |V         |          |
76+50       0.1273      0.06  Q          |          |V         |          |
76+55       0.1278      0.06  Q          |          |V         |          |
77+ 0       0.1282      0.06  Q          |          | V        |          |
77+ 5       0.1286      0.05  Q          |          | V        |          |
77+10       0.1289      0.05  Q          |          | V        |          |
77+15       0.1292      0.05  Q          |          | V        |          |
77+20       0.1296      0.05  Q          |          | V        |          |
77+25       0.1300      0.06  Q          |          | V        |          |
77+30       0.1304      0.06  Q          |          | V        |          |
77+35       0.1308      0.06  Q          |          | V        |          |
77+40       0.1312      0.06  Q          |          | V        |          |
77+45       0.1317      0.06  Q          |          | V        |          |
77+50       0.1321      0.06  Q          |          | V        |          |
77+55       0.1326      0.06  Q          |          | V        |          |
78+ 0       0.1330      0.06  Q          |          | V        |          |
78+ 5       0.1335      0.07  Q          |          | V        |          |
78+10       0.1340      0.07  Q          |          |  V       |          |
78+15       0.1345      0.07  Q          |          |  V       |          |
78+20       0.1350      0.07  Q          |          |  V       |          |
78+25       0.1355      0.07  Q          |          |  V       |          |
78+30       0.1360      0.07  Q          |          |  V       |          |
78+35       0.1365      0.08  Q          |          |  V       |          |
78+40       0.1371      0.08  Q          |          |  V       |          |
78+45       0.1376      0.08  Q          |          |  V       |          |
78+50       0.1382      0.08  Q          |          |  V       |          |
78+55       0.1387      0.08  Q          |          |  V       |          |
79+ 0       0.1393      0.08  Q          |          |  V       |          |
79+ 5       0.1398      0.08  Q          |          |   V      |          |
79+10       0.1404      0.08  Q          |          |   V      |          |
79+15       0.1410      0.08  Q          |          |   V      |          |
79+20       0.1415      0.09  Q          |          |   V      |          |
79+25       0.1422      0.09  Q          |          |   V      |          |
79+30       0.1428      0.09  Q          |          |   V      |          |
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79+35       0.1434      0.09  Q          |          |   V     |          |
79+40       0.1441      0.10  Q          |          |   V     |          |
79+45       0.1447      0.10  Q          |          |   V     |          |
79+50       0.1454      0.10  Q          |          |   V     |          |
79+55       0.1462      0.10  Q          |          |    V    |          |
80+ 0       0.1469      0.10  Q          |          |    V    |          |
80+ 5       0.1477      0.11  Q          |          |    V    |          |
80+10       0.1485      0.12  Q          |          |    V    |          |
80+15       0.1493      0.12  Q          |          |    V    |          |
80+20       0.1501      0.12  Q          |          |    V    |          |
80+25       0.1510      0.12  Q          |          |    V    |          |
80+30       0.1518      0.12  Q          |          |     V   |          |
80+35       0.1521      0.05  Q          |          |     V   |          |
80+40       0.1522      0.01  Q          |          |     V   |          |
80+45       0.1522      0.00  Q          |          |     V   |          |
80+50       0.1523      0.01  Q          |          |     V   |          |
80+55       0.1524      0.01  Q          |          |     V   |          |
81+ 0       0.1525      0.02  Q          |          |     V   |          |
81+ 5       0.1527      0.03  Q          |          |     V   |          |
81+10       0.1529      0.04  Q          |          |     V   |          |
81+15       0.1532      0.04  Q          |          |     V   |          |
81+20       0.1535      0.05  Q          |          |     V   |          |
81+25       0.1539      0.05  Q          |          |     V   |          |
81+30       0.1543      0.05  Q          |          |     V   |          |
81+35       0.1547      0.06  Q          |          |     V   |          |
81+40       0.1551      0.07  Q          |          |     V   |          |
81+45       0.1556      0.07  Q          |          |     V   |          |
81+50       0.1561      0.07  Q          |          |     V   |          |
81+55       0.1567      0.08  Q          |          |     V   |          |
82+ 0       0.1572      0.08  Q          |          |      V  |          |
82+ 5       0.1575      0.03  Q          |          |      V  |          |
82+10       0.1575      0.01  Q          |          |      V  |          |
82+15       0.1575      0.01  Q          |          |      V  |          |
82+20       0.1576      0.01  Q          |          |      V  |          |
82+25       0.1576      0.01  Q          |          |      V  |          |
82+30       0.1577      0.01  Q          |          |      V  |          |
82+35       0.1580      0.04  Q          |          |      V  |          |
82+40       0.1584      0.06  Q          |          |      V  |          |
82+45       0.1588      0.07  Q          |          |      V  |          |
82+50       0.1593      0.07  Q          |          |      V  |          |
82+55       0.1598      0.07  Q          |          |      V  |          |
83+ 0       0.1602      0.07  Q          |          |      V  |          |
83+ 5       0.1607      0.06  Q          |          |      V  |          |
83+10       0.1611      0.06  Q          |          |      V  |          |
83+15       0.1615      0.06  Q          |          |      V  |          |
83+20       0.1619      0.06  Q          |          |      V  |          |
83+25       0.1623      0.06  Q          |          |      V  |          |
83+30       0.1627      0.06  Q          |          |      V  |          |
83+35       0.1630      0.05  Q          |          |       V |          |
83+40       0.1633      0.04  Q          |          |       V |          |
83+45       0.1636      0.04  Q          |          |       V |          |
83+50       0.1639      0.05  Q          |          |       V |          |
83+55       0.1643      0.05  Q          |          |       V |          |
84+ 0       0.1647      0.05  Q          |          |       V |          |
84+ 5       0.1654      0.10  Q          |          |       V |          |
84+10       0.1663      0.13  Q          |          |       V |          |
84+15       0.1672      0.13  Q          |          |       V |          |
84+20       0.1682      0.14  Q          |          |       V |          |
84+25       0.1692      0.15  Q          |          |        V|          |
84+30       0.1702      0.15  Q          |          |        V|          |
84+35       0.1713      0.16  Q          |          |        V|          |
84+40       0.1725      0.17  Q          |          |        V|          |
84+45       0.1737      0.17  Q          |          |        V|          |
84+50       0.1749      0.18  Q          |          |         V          |
84+55       0.1762      0.18  Q          |          |         V          |
85+ 0       0.1775      0.19  Q          |          |         V          |
85+ 5       0.1790      0.22  Q          |          |         V          |
85+10       0.1806      0.24  Q          |          |         |V         |
85+15       0.1823      0.24  Q          |          |         |V         |
85+20       0.1840      0.24  Q          |          |         |V         |
85+25       0.1857      0.24  Q          |          |         |V         |
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85+30       0.1874      0.25  Q          |          |          | V       |
85+35       0.1885      0.17  Q          |          |          | V       |
85+40       0.1894      0.13  Q          |          |          | V       |
85+45       0.1903      0.12  Q          |          |          | V       |
85+50       0.1912      0.13  Q          |          |          | V       |
85+55       0.1920      0.13  Q          |          |          |  V      |
86+ 0       0.1929      0.13  Q          |          |          |  V      |
86+ 5       0.1940      0.15  Q          |          |          |  V      |
86+10       0.1951      0.17  Q          |          |          |  V      |
86+15       0.1963      0.17  Q          |          |          |  V      |
86+20       0.1975      0.17  Q          |          |          |  V      |
86+25       0.1986      0.16  Q          |          |          |   V     |
86+30       0.1997      0.16  Q          |          |          |   V     |
86+35       0.2009      0.16  Q          |          |          |   V     |
86+40       0.2020      0.17  Q          |          |          |   V     |
86+45       0.2031      0.17  Q          |          |          |   V     |
86+50       0.2042      0.16  Q          |          |          |    V    |
86+55       0.2053      0.16  Q          |          |          |    V    |
87+ 0       0.2064      0.16  Q          |          |          |    V    |
87+ 5       0.2074      0.15  Q          |          |          |    V    |
87+10       0.2085      0.15  Q          |          |          |    V    |
87+15       0.2095      0.15  Q          |          |          |     V   |
87+20       0.2104      0.14  Q          |          |          |     V   |
87+25       0.2114      0.14  Q          |          |          |     V   |
87+30       0.2123      0.14  Q          |          |          |     V   |
87+35       0.2131      0.11  Q          |          |          |     V   |
87+40       0.2138      0.10  Q          |          |          |     V   |
87+45       0.2144      0.10  Q          |          |          |     V   |
87+50       0.2151      0.10  Q          |          |          |     V   |
87+55       0.2158      0.10  Q          |          |          |      V  |
88+ 0       0.2164      0.10  Q          |          |          |      V  |
88+ 5       0.2168      0.06  Q          |          |          |      V  |
88+10       0.2171      0.04  Q          |          |          |      V  |
88+15       0.2173      0.03  Q          |          |          |      V  |
88+20       0.2175      0.03  Q          |          |          |      V  |
88+25       0.2177      0.03  Q          |          |          |      V  |
88+30       0.2180      0.03  Q          |          |          |      V  |
88+35       0.2182      0.03  Q          |          |          |      V  |
88+40       0.2183      0.02  Q          |          |          |      V  |
88+45       0.2185      0.02  Q          |          |          |      V  |
88+50       0.2187      0.02  Q          |          |          |      V  |
88+55       0.2188      0.02  Q          |          |          |      V  |
89+ 0       0.2190      0.02  Q          |          |          |      V  |
89+ 5       0.2192      0.03  Q          |          |          |      V  |
89+10       0.2195      0.04  Q          |          |          |      V  |
89+15       0.2198      0.04  Q          |          |          |      V  |
89+20       0.2201      0.04  Q          |          |          |      V  |
89+25       0.2203      0.04  Q          |          |          |      V  |
89+30       0.2206      0.04  Q          |          |          |      V  |
89+35       0.2209      0.04  Q          |          |          |      V  |
89+40       0.2212      0.04  Q          |          |          |       V |
89+45       0.2214      0.04  Q          |          |          |       V |
89+50       0.2217      0.04  Q          |          |          |       V |
89+55       0.2219      0.03  Q          |          |          |       V |
90+ 0       0.2221      0.03  Q          |          |          |       V |
90+ 5       0.2224      0.03  Q          |          |          |       V |
90+10       0.2226      0.03  Q          |          |          |       V |
90+15       0.2228      0.03  Q          |          |          |       V |
90+20       0.2230      0.03  Q          |          |          |       V |
90+25       0.2232      0.03  Q          |          |          |       V |
90+30       0.2235      0.03  Q          |          |          |       V |
90+35       0.2236      0.03  Q          |          |          |       V |
90+40       0.2238      0.02  Q          |          |          |       V |
90+45       0.2240      0.02  Q          |          |          |       V |
90+50       0.2241      0.02  Q          |          |          |       V |
90+55       0.2242      0.02  Q          |          |          |       V |
91+ 0       0.2243      0.02  Q          |          |          |       V |
91+ 5       0.2245      0.02  Q          |          |          |       V |
91+10       0.2246      0.02  Q          |          |          |       V |
91+15       0.2248      0.02  Q          |          |          |       V |
91+20       0.2250      0.03  Q          |          |          |       V |
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  91+25       0.2252      0.03  Q          |          |          |        V |
  91+30       0.2255      0.03  Q          |          |          |        V |
  91+35       0.2256      0.03  Q          |          |          |        V |
  91+40       0.2258      0.02  Q          |          |          |        V |
  91+45       0.2260      0.02  Q          |          |          |        V |
  91+50       0.2261      0.02  Q          |          |          |        V |
  91+55       0.2262      0.02  Q          |          |          |        V |
  92+ 0       0.2263      0.02  Q          |          |          |        V |
  92+ 5       0.2265      0.02  Q          |          |          |        V |
  92+10       0.2266      0.02  Q          |          |          |        V |
  92+15       0.2268      0.02  Q          |          |          |        V |
  92+20       0.2270      0.02  Q          |          |          |         V|
  92+25       0.2271      0.02  Q          |          |          |         V|
  92+30       0.2273      0.02  Q          |          |          |         V|
  92+35       0.2275      0.02  Q          |          |          |         V|
  92+40       0.2276      0.02  Q          |          |          |         V|
  92+45       0.2278      0.02  Q          |          |          |         V|
  92+50       0.2279      0.02  Q          |          |          |         V|
  92+55       0.2281      0.02  Q          |          |          |         V|
  93+ 0       0.2282      0.02  Q          |          |          |         V|
  93+ 5       0.2283      0.02  Q          |          |          |         V|
  93+10       0.2285      0.02  Q          |          |          |         V|
  93+15       0.2286      0.02  Q          |          |          |         V|
  93+20       0.2288      0.02  Q          |          |          |         V|
  93+25       0.2289      0.02  Q          |          |          |         V|
  93+30       0.2290      0.02  Q          |          |          |         V|
  93+35       0.2291      0.02  Q          |          |          |         V|
  93+40       0.2293      0.02  Q          |          |          |         V|
  93+45       0.2295      0.02  Q          |          |          |         V|
  93+50       0.2296      0.02  Q          |          |          |         V|
  93+55       0.2297      0.02  Q          |          |          |         V|
  94+ 0       0.2298      0.02  Q          |          |          |         V|
  94+ 5       0.2300      0.02  Q          |          |          |         V|
  94+10       0.2301      0.02  Q          |          |          |         V|
  94+15       0.2303      0.02  Q          |          |          |         V|
  94+20       0.2304      0.02  Q          |          |          |         V|
  94+25       0.2306      0.02  Q          |          |          |         V|
  94+30       0.2307      0.02  Q          |          |          |         V|
  94+35       0.2308      0.02  Q          |          |          |         V|
  94+40       0.2309      0.02  Q          |          |          |         V|
  94+45       0.2310      0.02  Q          |          |          |         V|
  94+50       0.2311      0.02  Q          |          |          |         V|
  94+55       0.2312      0.02  Q          |          |          |         V|
  95+ 0       0.2313      0.02  Q          |          |          |         V|
  95+ 5       0.2314      0.02  Q          |          |          |         V|
  95+10       0.2315      0.02  Q          |          |          |         V|
  95+15       0.2317      0.02  Q          |          |          |         V|
  95+20       0.2318      0.02  Q          |          |          |         V|
  95+25       0.2319      0.02  Q          |          |          |         V|
  95+30       0.2320      0.02  Q          |          |          |         V|
  95+35       0.2321      0.02  Q          |          |          |         V|
  95+40       0.2322      0.02  Q          |          |          |         V|
  95+45       0.2323      0.02  Q          |          |          |         V|
  95+50       0.2324      0.02  Q          |          |          |         V|
  95+55       0.2325      0.02  Q          |          |          |         V|
  96+ 0       0.2327      0.02  Q          |          |          |         V|
  96+ 5       0.2327      0.01  Q          |          |          |         V|
  96+10       0.2327      0.00  Q          |          |          |          V
-----------------------------------------------------------------------
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Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

Appendix 8

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the 2014 SMR WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1on page 31 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ A. **On-site storm drain inlets**	☒ **Locations of inlets.**	☒ **Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.**	☒ **Maintain and periodically repaint or replace inlet markings.** ☒ **Provide stormwater pollution prevention information to new site owners, lessees, or operators.** ☒ **See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** ☒ **Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."**
☐ B. **Interior floor drains and elevator shaft sump pumps**		☐ **State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**
☐ C. **Interior parking garages**		☐ **State that parking garage floor drains will be plumbed to the sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ D1. **Need for future indoor & structural pest control**		☐ **Note building design features that discourage entry of pests.**	☐ **Provide Integrated Pest Management information to owners, lessees, and operators.**
☒ D2. **Landscape/ Outdoor Pesticide Use**	☐ **Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.** ☒ **Show self-retaining landscape areas, if any.** ☒ **Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)**	**State that final landscape plans will accomplish all of the following.** ☐ **Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.** ☒ **Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.** ☐ **Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.** ☒ **Consider using pest-resistant plants, especially adjacent to hardscape. To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.**	☒ **Maintain landscaping using minimum or no pesticides.** ☒ **See applicable operational BMPs in "What you should know for…..Landscape and Gardening"** at http://www.rcflood.org/stormwater/Downloads/LandscapeGardenBrochure.pdf ☒ **Provide IPM information to new owners, lessees and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ E. **Pools, spas, ponds, decorative fountains, and other water features.**	☐ **Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environmental Health Guidelines.)**	**If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.**	☐ **See applicable operational BMPs in "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at** http://www.rcflood.org/stormwater/Downloads/poolsandspas.pdf
☐ F. **Food service**	☐ **For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.** ☐ **On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.**	☐ **Describe the location and features of the designated cleaning area.** ☐ **Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.**	☐ **See the brochure, "The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at** http://www.rcflood.org/stormwater/downloads/FoodServ.pdf **Provide this brochure to new site owners, lessees, and operators.**
☒ G. **Refuse areas**	☐ **Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.** ☒ **If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area.** ☐ **Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.**	☐ **State how site refuse will be handled and provide supporting detail to what is shown on plans.** ☒ **State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.**	☒ **State how the following will be implemented:** **Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at** www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ H. **Industrial processes.**	❑ **Show process area.**	❑ **If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."**	❑ **See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://www.rcflood.org/stormwater/Downloads/IndustrialCommercialFacilities.pdf
❑ I. **Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)**	❑ **Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area.** ❑ **Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.** ❑ **Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.**	❑ **Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.** **Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for:** ▪ **Hazardous Waste Generation** ▪ **Hazardous Materials Release Response and Inventory** ▪ **California Accidental Release (CalARP)** ▪ **Aboveground Storage Tank** ▪ **Uniform Fire Code Article 80 Section 103(b) & (c) 1991** ▪ **Underground Storage Tank** www.cchealth.org/groups/hazmat/	❑ **See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ J. Vehicle and Equipment Cleaning	☒ **Show on drawings as appropriate:** **(1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.** **(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).** **(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.** **(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.**	☐ **If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.**	**Describe operational measures to implement the following (if applicable):** ☒ **Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system. Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at** http://www.rcflood.org/stormwater/downloads/OutdoorCleaningActivities.pdf ☐ **Car dealerships and similar may rinse cars with water only.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ K. **Vehicle/Equipment Repair and Maintenance**	❑ **Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.** ❑ **Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.** ❑ **Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.**	❑ **State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.** ❑ **State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.** ❑ **State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.**	**In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:** ❑ **No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.** ❑ **No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.** ❑ **No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.** **Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at** http://rcflood.org/stormwater/ **Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at** http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ L. **Fuel Dispensing Areas**	☒ **Fueling areas[6] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable.** ☒ **Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.**		☒ **The property owner shall dry sweep the fueling area routinely.** ☒ **See the Fact Sheet SD-30 , "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

[6] The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ M. **Loading Docks**	❑ **Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.** ❑ **Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.** ❑ **Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.**		❑ **Move loaded and unloaded items indoors as soon as possible.** ❑ **See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ N. **Fire Sprinkler Test Water**		❑ **Provide a means to drain fire sprinkler test water to the sanitary sewer.**	❑ **See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**
O. **Miscellaneous Drain or Wash Water or Other Sources** ❑ **Boiler drain lines** ❑ **Condensate drain lines** ❑ **Rooftop equipment** ❑ **Drainage sumps** ☒ **Roofing, gutters, and trim.** ❑ **Other sources**		❑ **Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.** ❑ **Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.** ❑ **Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.** ❑ **Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.** ☒ **Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.** ❑ **Include controls for other sources as specified by local reviewer.**	

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ P. **Plazas, sidewalks, and parking lots.**			☒ **Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.**

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Recording requested by and mail to:

City Clerk
City of Beaumont
550 E. Sixth Street
Beaumont, CA 92223

SPACE ABOVE THIS LINE FOR RECORDER'S USE
EXEMPT FROM RECORDER'S FEES PURSUANT TO GOVERNMENT CODE SECTION 6103 AND 27383

APN:

STORM WATER MANAGEMENT WQMP/BMP FACILITIES

COVENANT AND AGREEMENT NO. _

City of Beaumont, Riverside County, California

THIS COVENANT AND AGREEMENT is made and entered into this of 2019, by and between 1151 E 6th Street, LLC_____, ("Owner"), and the City of Beaumont, California, ("City").

The Owner hereby certifies I am (we are) the sole owner of certain real property located at _____(Site Address) in the City of Beaumont, County of Riverside, State of California, more specifically described in **Exhibit "A"** and depicted in **Exhibit "B" (**"Property").

The Owner covenants and agrees to comply with the Project Water Quality Management Plan ("WQMP"), attached hereto as **Exhibit "C"**, providing for storm water quality treatment within the confines of the Property.

The Owner covenants and agrees that the health, safety and welfare of the residents of the City of Beaumont, require that the Best Management Practice ("BMP") facilities, more specifically described in the WQMP (for example bio- swales, catch basins, roof drains and appurtenances) be constructed and maintained to minimize pollutants in urban runoff by the Owner.

The Owner further covenants and agrees as follows:

1. The on-site storm water management/BMP facilities mentioned above shall be constructed by the Owner at its sole cost and expense, in accordance with the plans and specifications identified in the WQMP approved by City.

2. The Owner shall adequately maintain the storm water management/BMP facilities in a manner assuring peak performance at all times, including source control BMPs at all times as its sole responsibility, at its sole cost and expense. This includes all pipes and channels built to convey storm water on the Property, including

catch basin inserts, underground detention ponds, swales and vegetation provided to control the quantity and quality of the storm water. Adequate maintenance is herein defined as good working condition so that these facilities are performing in accordance with their design functions continuously at all times.

3. The Owner shall annually inspect the storm water management/BMP facilities mentioned above and submit an inspection report annually to the Public Works Department by the anniversary of the date of this Agreement of each year. The purpose of the inspection is to assure safe and proper functioning of the facilities. The inspection shall cover the storm water management BMPs listed in the WQMP such as bio-swales, catch basins and related filter units, etc. Deficiencies shall be noted in the inspection report and corrected by Owner promptly.

4. The Owner hereby grants permission to City, its authorized agents and employees, to enter upon the Property and to inspect the storm water management/BMP facilities, take samples and perform testing whenever the City deems necessary and as required by the City's most current National Pollutant Discharge Elimination System (NPDES) Permit. The purpose of the inspection, testing and sampling is to follow up on apparent and reported deficiencies and/or to respond to citizen complaints and meet the requirements of the City's NPDES Permit issued by the State Water Resources Control Board – Santa Ana River Region. The City shall provide the Owner with advanced notice of entering upon the Property, except in the event of an emergency, as determined by the City. The City shall provide the Owner copies of the inspection findings and a directive to commence with the repairs if necessary. Owner or Owner's successors or assigns shall pay City for all costs incurred by City in the inspection, sampling, testing of the BMPs within thirty (30) calendar days of City invoice.

5. In the event the Owner fails to maintain the storm water management/BMP facilities in good working condition acceptable to the City, upon five (5) days advanced written notice, the City may enter upon the Property and take whatever steps necessary to correct deficiencies identified in any inspection report and to charge the costs of such repairs to the Owner the cost of which shall constitute a lien against the Property. In the event of an emergency, as determined by City, advanced notice as aforesaid, shall not be required. Notwithstanding the forgoing, it is expressly understood and agreed that the City is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation to the City.

6. The Owner will perform the work necessary to keep these facilities in good working order as appropriate. The maintenance schedule for the storm water management BMP facilities (including sediment removal) is outlined in the approved WQMP and the schedule must be followed at all times. In the future, City of Beaumont may adopt an annual Stormwater Inspection Fee that would be assessed to the Owner.

7. In the event the City, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials and the like, the Owner, its successors and assigns shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the City hereunder.

8. This Agreement imposes no liability of any kind whatsoever on the City. Owner agrees to indemnify, defend (with counsel reasonably approved by the City) and hold harmless the City and its authorized officers, employees, agents and volunteers from any and all claims, actions, losses, damages, and/or liability arising out of this Agreement from any cause whatsoever, including the acts, errors or omissions of any person and

for any costs or expenses incurred by the City on account of any claim except where such indemnification is prohibited by law. This indemnification provision shall apply regardless of the existence or degree of fault of indemnitees. The Owner's indemnification obligation applies to the City's "active" as well as "passive" negligence but does not apply to the City's "sole negligence" or "willful misconduct" within the meaning of Civil Code Section 2782, or to any claims, actions, losses, damages, and/or liabilities, to the extent caused by the acts or omissions of any third party contractors undertaking any work (other than field inspections) or other maintenance on the Property on behalf of the City under this Agreement.

9. This Agreement shall be recorded with the County Recorder for the County of Riverside and shall constitute a covenant running with the land, equitable servitude and lien against the Property, and shall be binding on the Owner, its successors, assigns, transferees, administrators, executors, heirs, encumbrancers and any other successors in interests, including any homeowner's association.

10. In addition to any remedy available to City under this Agreement, if Owner violates any term of this Agreement and does not cure the violation within the time already provided in this Agreement, or, if not provided, within thirty (30) calendar days, or within such time authorized by the City if said cure reasonably requires more than the subject time, the City may bring an action at law or in equity in a court of competent jurisdiction to enforce compliance by the Owner with the terms of this Agreement. In such action, the City may recover any damages to which the City may be entitled for the violation, enjoin the violation by temporary or permanent injunction without the necessity of proving actual damages or the inadequacy of otherwise available legal remedies, or obtain other equitable relief, including, but not limited to, the restoration of the Property and/or the BMPs identified in the WQMP to the condition in which it/they existed prior to any such violation or injury.

11. Owner shall provide printed educational materials with any sale of the Property which provide information on what storm water management facilities are present, the types and locations of maintenance signs that are required and how the necessary maintenance can be maintained.

12. Owner shall provide actual notice of this Agreement and its terms to any respective buyers or successor(s) in interest.

13. In order to be valid, amendment or change to this Agreement including the WQMP and BMPs requires an amendment executed by the City and Owner which is recorded with the Riverside County Recorder.

WITNESS the following signatures:

OWNER:

By: _____ By: _____

Name: _____ Name: _____

Title: _____ Title: _____

CITY OF BEAUMONT

By: _____
Director of Public Works, Beaumont

ATTEST:

_____
City Clerk, City of Beaumont

All signatures on this Agreement on behalf of the Owner must be acknowledged before a Notary Public. In the event that the owner is a corporation, the President/Vice President and the corporate secretary of the corporation must sign.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Riverside)

On _____, 2019, before me, _____, notary public, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: _____ (Seal)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Riverside)

On _____, 2019, before me, _____, notary public, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature: (Seal)

EXHIBIT "A"
LEGAL DESCRIPTION

PARCEL B AS SHOWN ON LOT LINE ADJUSTMENT NO. OS-LLA-03, AS EVIDENCED BY DOCUMENT RECORDED MAY 11, 2005 AS INSTRUMENT NO. 2005-0372688 OF OFFICIAL RECORDS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THAT PORTION OF LOT 1, BLOCK 92 OF THE AMENDED MAP OF THE TOWN OF BEAUMONT AS FILED IN MAP BOOK 6 PAGES 16, RECORDS OF RIVERSIDE COUNTY, STATE OF CALIFORNIA, LOCATED IN SECTION 10, TOWNSHIP 3 SOUTH, RANGE 1 WEST, SAN BERNARDINO MERIDIAN, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID LOT 1; THENCE EAST ALONG THE NORTHERLY LINE OF SAID LOT 1 A DISTANCE OF 111.54 FEET TO THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE, EAST CONTINUING ALONG SAID NORTHERLY LINE 223.46 FEET TO THE NORTHEAST CORNER OF SAID LOT 1; THENCE, SOUTH ALONG THE EASTERLY LINE OF SAID LOT 1, A DISTANCE OF 260.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT 1; THENCE WEST ALONG THE SOUTHERLY LINE OF SAID LOT 1, A DISTANCE OF 223.46 FEET; THENCE, NORTH A DISTANCE OF 260.00 FEET TO THE TRUE POINT OF BEGINNING.

6TH STREET

PROP R/W

A1

4

2

SD

PENNSYLVANIA AVE

PROP R/W

SD INLET 1

DMA 2

0.645 ACRES/28,110 SF

EXIST ACCESS/PARKING (AUTOZONE)

3

SD INLET 1

8" SD

12" SD

CARWASH

5

6" UNDERDRAIN

BIORETENTION BASIN #2 997 SF

DMA 1

0.15 ACRES/6,588 SF

C-STORE

ROOF DOWNSPOUT

ROOF DOWNSPOUT

BIORETENTION BASIN #1 260 SF

6" UNDERDRAIN

6" SD

OVERFLOW SD

6" SD

SD INLET 1

DISCHARGE INTO 42" SD

8" SD

OVERFLOW SD

P/L

12" SD

2600

HYDRODYNAMIC SEPARATOR

20

EXHIBIT "C"
WQMP

OPERATIONS AND MAINTENANCE MANUAL

A. Purpose

The purpose of this manual is to provide maintenance instructions for the Bioretention Basin and Gravity Separator. The Bioretention Basin and Gravity Separator treat urban runoff before it enters into the onsite storm drain system. Maintenance per this manual will ensure the Bioretention Basins and Gravity Separator function as designed.

This manual will serve as a reference guide to assist the property owner with the following:

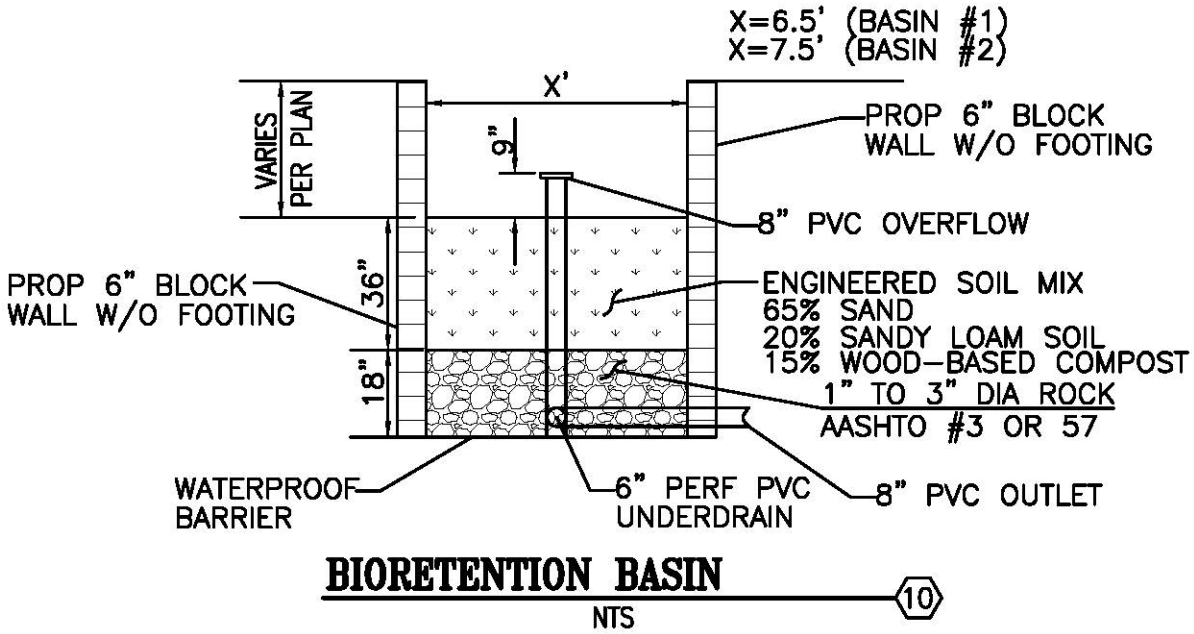
1. Overview of the Bioretention Basin and how it functions
2. Description of the location of the Bioretention Basins
3. Procedure required to effectively maintain the Bioretention Basins and Gravity Separator
4. Reproducible copies of the forms, logs, and guidelines necessary for recording maintenance activities associated with the Bioretention Basins and Gravity Separator

B. General Description and Function of the Bioretention Basin

Bioretention Basin

The Bioretention Basins are composed of a surface area of 1215 SF that is a minimum of 1' deep on the surface and 4' deep under the surface that allows urban runoff to be treated. From the top of the trench to the bottom the material consists of:

1. Mulch or landscape material on top
2. 36” of amended soil
3. 12" of pea gravel



C. Maintenance Responsibility

The property owner, 1151 E 6th Street, LLC, is responsible for maintaining the Bioretention Basins. Regular inspection and replacement of materials within the Bioretention Basins once it becomes ineffective in performing as designed are the major components in the maintenance program. Trash, litter, and debris will also need to be removed on a regular basis. The following general procedures should be followed:

1. Qualified maintenance personnel should periodically inspect the Bioretention Basins every 6 months.
2. If a problem is identified, it should be resolved as soon as possible to ensure that the Bioretention Basins functions as designed.
3. Regular removal of trash and debris should occur. Any visible trash or debris should be promptly removed.

Detailed maintenance procedures are outlined in Section E

D. Maintenance Indicators and Activities

Functional Maintenance

Regular functional maintenance is required to ensure that the Bioretention Basins perform in an effective manner. Functional maintenance consists of both preventative and corrective activities. Logs and guide sheets are contained herein to use in recording vital information while performing operation inspection and other Bioretention Basin maintenance activities. Maintenance records shall be kept by the property owner for a minimum of 5 years. The proper use and subsequent storage of these records will assure the City of Beaumont that the Bioretention Basins are functioning as designed.

Preventative Maintenance

Preventative maintenance shall be performed on a regular basis. Checklists are included herein to track and record preventative maintenance activities. These activities include trash and debris removal and sediment management.

Trash and debris removal shall be performed to ensure that runoff has adequate surface area to passes through the various layers that comprise the cross section of the BMP and to ensure the Bioretention Basins functions properly.

Corrective Maintenance

Corrective maintenance will be required on an emergency or non-routine basis to correct problems and restore intended operation and safe function of the Bioretention Basins

1. Inspect minimum of twice per year, before and after the rainy season, after large storms or more frequently as needed.
2. Clean the BMP when the loss of capacity is observed. When standing water is present for a period of time in excess of 72 hours, removal of sediment may be necessary. This is an

expensive activity and the need for it may be minimized through the prevention of erosion.

3. Control mosquitoes as necessary
4. Remove litter and debris from surface as required

TABLE 1: Typical Maintenance Activities for the Bioretention Basins			
Design Criteria & Routine Actions	**Maintenance Indicator**	**Inspection Frequency**	**Maintenance Activity**
Inspection for standing water in the Bioretention Basins	Presence of water that has been standing for 72 hours	Annual and 72 hours after storm	Check the outlet pipes for blockage and unclog
Inspect sediment and build up within Bioretention Basins	Sediment depth within 2" of the bottom of the basin	Bi-Annually	Remove sediment and debris from the Bioretention Basin

Maintenance Indicators

Maintenance indicators are signs that indicate that maintenance personnel need to check the Bioretention Basins for maintenance needs. The most common trigger include warnings or accounts of standing water and sediment accumulation. The proceeding Table 1 show conditions and criteria that trigger the need for some specific routine maintenance activities. Emergencies that occasionally arise would require a more urgent, critical response.

Sediment Removal

The types of storm water pollutants that accumulate in sediment varies, but may include contaminants such as heavy metals, petroleum hydrocarbons, and other organic compounds such as pesticides or solvents. When the sediment reaches a level of 2", the sediment must be removed.

Sediment Disposal

Several methods for disposal are available depending on the concentration of toxins in the waste. Methods can range from recycling the material, to depositing the sediment into appropriate landfills.

At the time of disposal, if wastes are deemed to be unfit for disposal in a municipal landfill, a full and comprehensive testing program should be run by a qualified person to test for all the constiutuents outlined under California code of Regulations (CCR) Title 22. Title 22 list concentrations of certain chemicals and their soluble threshold limit concentrations (STLC's) and their total threshold limit concentrations (TTLC's). Chemicals that exceed the allowable concentrations are considered hazardous wastes and must be removed from the sediment.

E. Gravity Separator

Maintenance Guide

BaySaver Barracuda™

July 2017

One of the advantages of the BaySaver Barracuda is the ease of maintenance. Like any system that collects pollutants, the BaySaver Barracuda must be maintained for continued effectiveness. Maintenance is a simple procedure performed using a vacuum truck or similar equipment. The systems were designed to minimize the volume of water removed during routine maintenance, reducing disposal costs.

Contractors can access the pollutants stored in the manhole through the manhole cover. This allows them to gain vacuum hose access to the bottom of the manhole to remove sediment and trash. There is no confined space entry necessary for inspection or maintenance.

The entire maintenance procedure typically takes from 2 to 4 hours, depending on the size of the system, the captured material, and the capacity of the vacuum truck.

Local regulations may apply to the maintenance procedure. Safe and legal disposal of pollutants is the responsibility of the maintenance contractor. Maintenance should be performed only by a qualified contractor.

Inspection and Cleaning Cycle

Periodic inspection is needed to determine the need for and frequency of maintenance. You should begin inspecting as soon as construction is complete and thereafter on an annual basis. Typically, the system needs to be cleaned every 1-3 years.

Excessive oils, fuels or sediments may reduce the maintenance cycle. Periodic inspection is important.

Determining When to Clean

To determine the sediment depth, the maintenance contractor should lower a stadia rod into the manhole until it contacts the top of the captured sediment and mark that spot on the rod. Then push the probe through to the bottom of the sump and mark that spot to determine sediment depth.

Maintenance should occur when the sediment has reached the levels indicated in the Storage Capacity Chart.

BaySaver Barracuda Storage Capacities

Model	Manhole Diameter	Treatment Chamber Capacity	Standard Sediment Capacity (20" depth)	NJDEP Sediment Capacity (50% of standard depth)
S3	36"	212 gallons	0.44 cubic yards	0.22 cubic yards
S4	48"	564 gallons	0.78 cubic yards	0.39 cubic yards
S5	60"	881 gallons	1.21 cubic yards	0.61 cubic yards
S6	72"	1269 gallons	1.75 cubic yards	0.88 cubic yards
S8	96"	3835 gallons	3.10 cubic yards	1.55 cubic yards
S10	120"	7496 gallons	4.85 cubic yards	2.43 cubic yards

Maintenance Instructions

1. Remove the manhole cover to provide access to the pollutant storage. Pollutants are stored in the sump, below the bowl assembly visible from the surface. You'll access this area through the 10" diameter access cylinder.

©ADS 2017

2. Use a vacuum truck or other similar equipment to remove all water, debris, oils and sediment. See figure 1.
3. Use a high pressure hose to clean the manhole of all the remaining sediment and debris. Then, use the vacuum truck to remove the water.
4. Fill the cleaned manhole with water until the level reaches the invert of the outlet pipe.
5. Replace the manhole cover.
6. Dispose of the polluted water, oils, sediment and trash at an approved facility.
   - Local regulations prohibit the discharge of solid material into the sanitary system. Check with the local sewer authority for authority to discharge the liquid.
   - Some localities treat the pollutants as leachate. Check with local regulators about disposal requirements.
   - Additional local regulations may apply to the maintenance procedure.

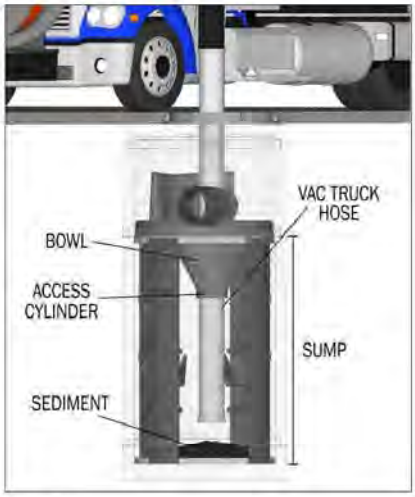


Figure 1

4640 TRUEMAN BLVD. HILLIARD, OH 43026 (800) 821-6710 www.ads-pipe.com

©ADS 2017

F. Inspection and Maintenance Checklist

Bioretention Basin & Gravity Separator Inspection and Maintenance Checklist

Date of Inspection_____

Type of Inspection_____

Defect	Conditions When Maintenance is Required	Maintenance Needed (Yes/No)	Comments	Results Expected When Maintenance is Performed
Standing Water	When water is present in bmp longer than 72 hours			There should be no standing water in excess of 72 hours
Trash and Debris	Visible confirmation of accumulated trash and debris			Trash & debris should be removed from Bioretention Basin and disposed of properly
Sediment	Evidence of sedimentation in Bioretention Basin			Materials removed and disposed of properly so that there is no standing water
Bedding Layers/ Side Slopes	Visual inspection reveals material is not uniform or has been dug up			Uniform graded surfaces, no erosion apparent
Miscellaneous	Any condition not covered above that needs attention to ensure proper function of the Bioretention Basin			Meet the design specifications
Hydrodyamic Seperator	When sediment exceeds 20” depth			All sediment & debris removed

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

Site Design & Landscape Planning SD-10

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- ☑ Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Each project site possesses unique topographic, hydrologic, and vegetative features, some of which are more suitable for development than others. Integrating and incorporating appropriate landscape planning methodologies into the project design is the most effective action that can be done to minimize surface and groundwater contamination from stormwater.

Approach

Landscape planning should couple consideration of land suitability for urban uses with consideration of community goals and projected growth. Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for site design and landscapes planning should conform to applicable standards and specifications of agencies with jurisdiction and be consistent with applicable General Plan and Local Area Plan policies.

Designing New Installations

Begin the development of a plan for the landscape unit with attention to the following general principles:

- Formulate the plan on the basis of clearly articulated community goals. Carefully identify conflicts and choices between retaining and protecting desired resources and community growth.

- Map and assess land suitability for urban uses. Include the following landscape features in the assessment: wooded land, open unwooded land, steep slopes, erosion-prone soils, foundation suitability, soil suitability for waste disposal, aquifers, aquifer recharge areas, wetlands, floodplains, surface waters, agricultural lands, and various categories of urban land use. When appropriate, the assessment can highlight outstanding local or regional resources that the community determines should be protected (e.g., a scenic area, recreational area, threatened species habitat, farmland, fish run). Mapping and assessment should recognize not only these resources but also additional areas needed for their sustenance.

Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Conserve Natural Areas during Landscape Planning

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.

- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.

- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.

- Promote natural vegetation by using parking lot islands and other landscaped areas.

- Preserve riparian areas and wetlands.

Maximize Natural Water Storage and Infiltration Opportunities Within the Landscape Unit

- Promote the conservation of forest cover. Building on land that is already deforested affects basin hydrology to a lesser extent than converting forested land. Loss of forest cover reduces interception storage, detention in the organic forest floor layer, and water losses by evapotranspiration, resulting in large peak runoff increases and either their negative effects or the expense of countering them with structural solutions.

- Maintain natural storage reservoirs and drainage corridors, including depressions, areas of permeable soils, swales, and intermittent streams. Develop and implement policies and

regulations to discourage the clearing, filling, and channelization of these features. Utilize them in drainage networks in preference to pipes, culverts, and engineered ditches.

- Evaluating infiltration opportunities by referring to the stormwater management manual for the jurisdiction and pay particular attention to the selection criteria for avoiding groundwater contamination, poor soils, and hydrogeological conditions that cause these facilities to fail. If necessary, locate developments with large amounts of impervious surfaces or a potential to produce relatively contaminated runoff away from groundwater recharge areas.

Protection of Slopes and Channels during Landscape Design

- Convey runoff safely from the tops of slopes.
- Avoid disturbing steep or unstable slopes.
- Avoid disturbing natural channels.
- Stabilize disturbed slopes as quickly as possible.
- Vegetate slopes with native or drought tolerant vegetation.
- Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
- Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in run-off velocity and frequency caused by the project do not erode the channel.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
- Line on-site conveyance channels where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are high enough to erode grass or other vegetative linings, riprap, concrete, soil cement, or geo-grid stabilization are other alternatives.
- Consider other design principles that are comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Redevelopment may present significant opportunity to add features which had not previously been implemented. Examples include incorporation of depressions, areas of permeable soils, and swales in newly redeveloped areas. While some site constraints may exist due to the status of already existing infrastructure, opportunities should not be missed to maximize infiltration, slow runoff, reduce impervious areas, disconnect directly connected impervious areas.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Stormwater Management Manual for Western Washington, Washington State Department of Ecology, August 2001.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Roof Runoff Controls SD-11

Rain Garden

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Various roof runoff controls are available to address stormwater that drains off rooftops. The objective is to reduce the total volume and rate of runoff from individual lots, and retain the pollutants on site that may be picked up from roofing materials and atmospheric deposition. Roof runoff controls consist of directing the roof runoff away from paved areas and mitigating flow to the storm drain system through one of several general approaches: cisterns or rain barrels; dry wells or infiltration trenches; pop-up emitters, and foundation planting. The first three approaches require the roof runoff to be contained in a gutter and downspout system. Foundation planting provides a vegetated strip under the drip line of the roof.

Approach

Design of individual lots for single-family homes as well as lots for higher density residential and commercial structures should consider site design provisions for containing and infiltrating roof runoff or directing roof runoff to vegetative swales or buffer areas. Retained water can be reused for watering gardens, lawns, and trees. Benefits to the environment include reduced demand for potable water used for irrigation, improved stormwater quality, increased groundwater recharge, decreased runoff volume and peak flows, and decreased flooding potential.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Designing New Installations

Cisterns or Rain Barrels

One method of addressing roof runoff is to direct roof downspouts to cisterns or rain barrels. A cistern is an above ground storage vessel with either a manually operated valve or a permanently open outlet. Roof runoff is temporarily stored and then released for irrigation or infiltration between storms. The number of rain

barrels needed is a function of the rooftop area. Some low impact developers recommend that every house have at least 2 rain barrels, with a minimum storage capacity of 1000 liters. Roof barrels serve several purposes including mitigating the first flush from the roof which has a high volume, amount of contaminants, and thermal load. Several types of rain barrels are commercially available. Consideration must be given to selecting rain barrels that are vector proof and childproof. In addition, some barrels are designed with a bypass valve that filters out grit and other contaminants and routes overflow to a soak-away pit or rain garden.

If the cistern has an operable valve, the valve can be closed to store stormwater for irrigation or infiltration between storms. This system requires continual monitoring by the resident or grounds crews, but provides greater flexibility in water storage and metering. If a cistern is provided with an operable valve and water is stored inside for long periods, the cistern must be covered to prevent mosquitoes from breeding.

A cistern system with a permanently open outlet can also provide for metering stormwater runoff. If the cistern outlet is significantly smaller than the size of the downspout inlet (say ¼ to ½ inch diameter), runoff will build up inside the cistern during storms, and will empty out slowly after peak intensities subside. This is a feasible way to mitigate the peak flow increases caused by rooftop impervious land coverage, especially for the frequent, small storms.

Dry wells and Infiltration Trenches

Roof downspouts can be directed to dry wells or infiltration trenches. A dry well is constructed by excavating a hole in the ground and filling it with an open graded aggregate, and allowing the water to fill the dry well and infiltrate after the storm event. An underground connection from the downspout conveys water into the dry well, allowing it to be stored in the voids. To minimize sedimentation from lateral soil movement, the sides and top of the stone storage matrix can be wrapped in a permeable filter fabric, though the bottom may remain open. A perforated observation pipe can be inserted vertically into the dry well to allow for inspection and maintenance.

In practice, dry wells receiving runoff from single roof downspouts have been successful over long periods because they contain very little sediment. They must be sized according to the amount of rooftop runoff received, but are typically 4 to 5 feet square, and 2 to 3 feet deep, with a minimum of 1-foot soil cover over the top (maximum depth of 10 feet).

To protect the foundation, dry wells must be set away from the building at least 10 feet. They must be installed in solids that accommodate infiltration. In poorly drained soils, dry wells have very limited feasibility.

Infiltration trenches function in a similar manner and would be particularly effective for larger roof areas. An infiltration trench is a long, narrow, rock-filled trench with no outlet that receives stormwater runoff. These are described under Treatment Controls.

Pop-up Drainage Emitter

Roof downspouts can be directed to an underground pipe that daylights some distance from the building foundation, releasing the roof runoff through a pop-up emitter. Similar to a pop-up irrigation head, the emitter only opens when there is flow from the roof. The emitter remains flush to the ground during dry periods, for ease of lawn or landscape maintenance.

Foundation Planting

Landscape planting can be provided around the base to allow increased opportunities for stormwater infiltration and protect the soil from erosion caused by concentrated sheet flow coming off the roof. Foundation plantings can reduce the physical impact of water on the soil and provide a subsurface matrix of roots that encourage infiltration. These plantings must be sturdy enough to tolerate the heavy runoff sheet flows, and periodic soil saturation.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Supplemental Information

Examples

- City of Ottawa's Water Links Surface –Water Quality Protection Program
- City of Toronto Downspout Disconnection Program
- City of Boston, MA, Rain Barrel Demonstration Program

Other Resources

Hager, Marty Catherine, Stormwater, "Low-Impact Development", January/February 2003. www.stormh2o.com

Low Impact Urban Design Tools, Low Impact Development Design Center, Beltsville, MD. www.lid-stormwater.net

Start at the Source, Bay Area Stormwater Management Agencies Association, 1999 Edition

Efficient Irrigation SD-12

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

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Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Landscape Maintenance SC-73

Objectives

- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	
Bacteria	
Oil and Grease	
Organics	
Oxygen Demanding	☑

Description

Landscape maintenance activities include vegetation removal; herbicide and insecticide application; fertilizer application; watering; and other gardening and lawn care practices. Vegetation control typically involves a combination of chemical (herbicide) application and mechanical methods. All of these maintenance practices have the potential to contribute pollutants to the storm drain system. The major objectives of this BMP are to minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters; prevent the disposal of landscape waste into the storm drain system by collecting and properly disposing of clippings and cuttings, and educating employees and the public.

Approach

Pollution Prevention

- Implement an integrated pest management (IPM) program. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools.
- Choose low water using flowers, trees, shrubs, and groundcover.
- Consider alternative landscaping techniques such as naturescaping and xeriscaping.
- Conduct appropriate maintenance (i.e. properly timed fertilizing, weeding, pest control, and pruning) to help preserve the landscapes water efficiency.

- Consider grass cycling (grass cycling is the natural recycling of grass by leaving the clippings on the lawn when mowing. Grass clippings decompose quickly and release valuable nutrients back into the lawn).

Suggested Protocols

Mowing, Trimming, and Weeding

- Whenever possible use mechanical methods of vegetation removal (e.g mowing with tractor-type or push mowers, hand cutting with gas or electric powered weed trimmers) rather than applying herbicides. Use hand weeding where practical.
- Avoid loosening the soil when conducting mechanical or manual weed control, this could lead to erosion. Use mulch or other erosion control measures when soils are exposed.
- Performing mowing at optimal times. Mowing should not be performed if significant rain events are predicted.
- Mulching mowers may be recommended for certain flat areas. Other techniques may be employed to minimize mowing such as selective vegetative planting using low maintenance grasses and shrubs.
- Collect lawn and garden clippings, pruning waste, tree trimmings, and weeds. Chip if necessary, and compost or dispose of at a landfill (see waste management section of this fact sheet).
- Place temporarily stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to storm drains.

Planting

- Determine existing native vegetation features (location, species, size, function, importance) and consider the feasibility of protecting them. Consider elements such as their effect on drainage and erosion, hardiness, maintenance requirements, and possible conflicts between preserving vegetation and the resulting maintenance needs.
- Retain and/or plant selected native vegetation whose features are determined to be beneficial, where feasible. Native vegetation usually requires less maintenance (e.g., irrigation, fertilizer) than planting new vegetation.
- Consider using low water use groundcovers when planting or replanting.

Waste Management

- Compost leaves, sticks, or other collected vegetation or dispose of at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Place temporarily stockpiled material away from watercourses and storm drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Reduce the use of high nitrogen fertilizers that produce excess growth requiring more frequent mowing or trimming.

- Avoid landscape wastes in and around storm drain inlets by either using bagging equipment or by manually picking up the material.

Irrigation

- Where practical, use automatic timers to minimize runoff.
- Use popup sprinkler heads in areas with a lot of activity or where there is a chance the pipes may be broken. Consider the use of mechanisms that reduce water flow to sprinkler heads if broken.
- Ensure that there is no runoff from the landscaped area(s) if re-claimed water is used for irrigation.
- If bailing of muddy water is required (e.g. when repairing a water line leak), do not put it in the storm drain; pour over landscaped areas.
- Irrigate slowly or pulse irrigate to prevent runoff and then only irrigate as much as is needed.
- Apply water at rates that do not exceed the infiltration rate of the soil.

Fertilizer and Pesticide Management

- Utilize a comprehensive management system that incorporates integrated pest management (IPM) techniques. There are many methods and types of IPM, including the following:
  - Mulching can be used to prevent weeds where turf is absent, fencing installed to keep rodents out, and netting used to keep birds and insects away from leaves and fruit.
  - Visible insects can be removed by hand (with gloves or tweezers) and placed in soapy water or vegetable oil. Alternatively, insects can be sprayed off the plant with water or in some cases vacuumed off of larger plants.
  - Store-bought traps, such as species-specific, pheromone-based traps or colored sticky cards, can be used.
  - Slugs can be trapped in small cups filled with beer that are set in the ground so the slugs can get in easily.
  - In cases where microscopic parasites, such as bacteria and fungi, are causing damage to plants, the affected plant material can be removed and disposed of (pruning equipment should be disinfected with bleach to prevent spreading the disease organism).
  - Small mammals and birds can be excluded using fences, netting, tree trunk guards.
  - Beneficial organisms, such as bats, birds, green lacewings, ladybugs, praying mantis, ground beetles, parasitic nematodes, trichogramma wasps, seed head weevils, and spiders that prey on detrimental pest species can be promoted.
- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.

- Use pesticides only if there is an actual pest problem (not on a regular preventative schedule).
- Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
- Do not mix or prepare pesticides for application near storm drains.
- Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest.
- Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Calibrate fertilizer and pesticide application equipment to avoid excessive application.
- Periodically test soils for determining proper fertilizer use.
- Sweep pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Purchase only the amount of pesticide that you can reasonably use in a given time period (month or year depending on the product).
- Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Dispose of empty pesticide containers according to the instructions on the container label.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering, and repair leaks in the irrigation system as soon as they are observed.
- Inspect pesticide/fertilizer equipment and transportation vehicles daily.

Training

- Educate and train employees on use of pesticides and in pesticide application techniques to prevent pollution. Pesticide application must be under the supervision of a California qualified pesticide applicator.
- Train/encourage municipal maintenance crews to use IPM techniques for managing public green areas.
- Annually train employees within departments responsible for pesticide application on the appropriate portions of the agency's IPM Policy, SOPs, and BMPs, and the latest IPM techniques.

- Employees who are not authorized and trained to apply pesticides should be periodically (at least annually) informed that they cannot use over-the-counter pesticides in or around the workplace.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Refer to SC-11, Spill Prevention, Control & Cleanup
- Have spill cleanup materials readily available and in a know in location
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- The Federal Pesticide, Fungicide, and Rodenticide Act and California Title 3, Division 6, Pesticides and Pest Control Operations place strict controls over pesticide application and handling and specify training, annual refresher, and testing requirements. The regulations generally cover: a list of approved pesticides and selected uses, updated regularly; general application information; equipment use and maintenance procedures; and record keeping. The California Department of Pesticide Regulations and the County Agricultural Commission coordinate and maintain the licensing and certification programs. All public agency employees who apply pesticides and herbicides in "agricultural use" areas such as parks, golf courses, rights-of-way and recreation areas should be properly certified in accordance with state regulations. Contracts for landscape maintenance should include similar requirements.
- All employees who handle pesticides should be familiar with the most recent material safety data sheet (MSDS) files.
- Municipalities do not have the authority to regulate the use of pesticides by school districts, however the California Healthy Schools Act of 2000 (AB 2260) has imposed requirements on California school districts regarding pesticide use in schools. Posting of notification prior to the application of pesticides is now required, and IPM is stated as the preferred approach to pest management in schools.

Requirements

Costs

Additional training of municipal employees will be required to address IPM techniques and BMPs. IPM methods will likely increase labor cost for pest control which may be offset by lower chemical costs.

Maintenance

Not applicable

Supplemental Information

Further Detail of the BMP

Waste Management

Composting is one of the better disposal alternatives if locally available. Most municipalities either have or are planning yard waste composting facilities as a means of reducing the amount of waste going to the landfill. Lawn clippings from municipal maintenance programs as well as private sources would probably be compatible with most composting facilities

Contractors and Other Pesticide Users

Municipal agencies should develop and implement a process to ensure that any contractor employed to conduct pest control and pesticide application on municipal property engages in pest control methods consistent with the IPM Policy adopted by the agency. Specifically, municipalities should require contractors to follow the agency's IPM policy, SOPs, and BMPs; provide evidence to the agency of having received training on current IPM techniques when feasible; provide documentation of pesticide use on agency property to the agency in a timely manner.

References and Resources

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

Los Angeles County Stormwater Quality Model Programs. Public Agency Activities http://ladpw.org/wmd/npdes/model_links.cfm

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Orange County Stormwater Program http://www.ocwatersheds.com/StormWater/swp_introduction.asp

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Landscaping and Lawn Care. Office of Water. Office of Wastewater Management. On-line: http://www.epa.gov/npdes/menuofbmps/poll_8.htm

Fueling Areas SD-30

Photo Credit: Geoff Brosseau

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- ☑ Collect and Convey

Description

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the stormwater conveyance system. Spills at vehicle and equipment fueling areas can be a significant source of pollution because fuels contain toxic materials and heavy metals that are not easily removed by stormwater treatment devices.

Approach

Project plans must be developed for cleaning near fuel dispensers, emergency spill cleanup, containment, and leak prevention.

Suitable Applications

Appropriate applications include commercial, industrial, and any other areas planned to have fuel dispensing equipment, including retail gasoline outlets, automotive repair shops, and major non-retail dispensing areas.

Design Considerations

Design requirements for fueling areas are governed by Building and Fire Codes and by current local agency ordinances and zoning requirements. Design requirements described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements.

Designing New Installations

Covering

Fuel dispensing areas should provide an overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area should drain to the project's treatment control BMP(s) prior to discharging to the stormwater conveyance system. Note - If fueling large equipment or vehicles that would prohibit the use of covers or roofs, the fueling island should be designed to sufficiently accommodate the larger vehicles and equipment and to prevent stormwater run-on and runoff. Grade to direct stormwater to a dead-end sump.

Surfacing

Fuel dispensing areas should be paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete should be prohibited. Use asphalt sealant to protect asphalt paved areas surrounding the fueling area. This provision may be made to sites that have pre-existing asphalt surfaces.

The concrete fuel dispensing area should be extended a minimum of 6.5 ft from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 ft, whichever is less.

Grading/Contouring

Dispensing areas should have an appropriate slope to prevent ponding, and be separated from the rest of the site by a grade break that prevents run-on of urban runoff. (Slope is required to be 2 to 4% in some jurisdictions' stormwater management and mitigation plans.)

Fueling areas should be graded to drain toward a dead-end sump. Runoff from downspouts/roofs should be directed away from fueling areas. Do not locate storm drains in the immediate vicinity of the fueling area.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

- In the case of an emergency, provide storm drain seals, such as isolation valves, drain plugs, or drain covers, to prevent spills or contaminated stormwater from entering the stormwater conveyance system.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Vortex Separator MP-51

Description

Vortex separators: (alternatively, swirl concentrators) are gravity separators, and in principle are essentially wet vaults. The difference from wet vaults, however, is that the vortex separator is round, rather than rectangular, and the water moves in a centrifugal fashion before exiting. By having the water move in a circular fashion, rather than a straight line as is the case with a standard wet vault, it is possible to obtain significant removal of suspended sediments and attached pollutants with less space. Vortex separators were originally developed for combined sewer overflows (CSOs), where it is used primarily to remove coarse inorganic solids. Vortex separation has been adapted to stormwater treatment by several manufacturers.

California Experience

There are currently about 100 installations in California.

Advantages

- May provide the desired performance in less space and therefore less cost.
- May be more cost-effective pre-treatment devices than traditional wet or dry basins.
- Mosquito control may be less of an issue than with traditional wet basins.

Limitations

- As some of the systems have standing water that remains between storms, there is concern about mosquito breeding.
- It is likely that vortex separators are not as effective as wet vaults at removing fine sediments, on the order 50 to 100 microns in diameter and less.
- The area served is limited by the capacity of the largest models.
- As the products come in standard sizes, the facilities will be oversized in many cases relative to the design treatment storm, increasing the cost.
- The non-steady flows of stormwater decreases the efficiency of vortex separators from what may be estimated or determined from testing under constant flow.
- Do not remove dissolved pollutants.
- A loss of dissolved pollutants may occur as accumulated organic

Design Considerations

- Service Area
- Settling Velocity
- Appropriate Sizing
- Inlet Pipe Diameter

Targeted Constituents

✓	Sediment	▲
✓	Nutrients	●
✓	Trash	
✓	Metals	●
	Bacteria	
✓	Oil and Grease	
✓	Organics	

Legend ***(Removal Effectiveness)***

● Low ■ High

▲ Medium

CASQA California Stormwater Quality Association

matter (e.g., leaves) decomposes in the units.

Design and Sizing Guidelines

The stormwater enters, typically below the effluent line, tangentially into the basin, thereby imparting a circular motion in the system. Due to centrifugal forces created by the circular motion, the suspended particles move to the center of the device where they settle to the bottom. There are two general types of vortex separation: free vortex and dampened (or impeded) vortex. Free vortex separation becomes dampened vortex separation by the placement of radial baffles on the weir-plate that impede the free vortex-flow pattern

It has been stated with respect to CSOs that the practical lower limit of vortex separation is a particle with a settling velocity of 12 to 16.5 feet per hour (0.10 to 0.14 cm/s). As such, the focus for vortex separation in CSOs has been with settleable solids generally 200 microns and larger, given the presence of the lighter organic solids. For inorganic sediment, the above settling velocity range represents a particle diameter of 50 to 100 microns. Head loss is a function of the size of the target particle. At 200 microns it is normally minor but increases significantly if the goal is to remove smaller particles.

The commercial separators applied to stormwater treatment vary considerably with respect to geometry, and the inclusion of radial baffles and internal circular chambers. At one extreme is the inclusion of a chamber within the round concentrator. Water flows initially around the perimeter between the inner and outer chambers, and then into the inner chamber, giving rise to a sudden change in velocity that purportedly enhances removal efficiency. The opposite extreme is to introduce the water tangentially into a round manhole with no internal parts of any kind except for an outlet hood. Whether the inclusion of chambers and baffles gives better performance is unknown. Some contend that free vortex, also identified as swirl concentration, creates less turbulence thereby increasing removal efficiency. One product is unique in that it includes a static separator screen.

- Sized is based on the peak flow of the design treatment event as specified by local government.
- If an in-line facility, the design peak flow is four times the peak of the design treatment event.
- If an off-line facility, the design peak flow is equal to the peak of the design treatment event.
- Headloss differs with the product and the model but is generally on the order of one foot or less in most cases.

Construction/Inspection Considerations

No special considerations.

Performance

Manufacturer's differ with respect to performance claims, but a general statement is that the manufacturer's design and rated capacity (cfs) for each model is based on and believed to achieve an aggregate reduction of 90% of all particles with a specific gravity of 2.65 (glacial sand) down to 150 microns, and to capture the floatables, and oil and grease. Laboratory tests of two products support this claim. The stated performance expectation therefore implies that a

lesser removal efficiency is obtained with particles less than 150 microns, and the lighter, organic settleables. Laboratory tests of one of the products found about 60% removal of 50 micron sand at the expected average operating flow rate

Experience with the use of vortex separators for treating combined sewer overflows (CSOs), the original application of this technology, suggests that the lower practical limit for particle removal are particles with a settling velocity of 12 feet per hour (Sullivan, 1982), which represents a particle diameter of 100 to 200 microns, depending on the specific gravity of the particle. The CSO experience therefore seems consistent with the limited experience with treating stormwater, summarized above

Traditional treatment technologies such as wet ponds and extended detention basins are generally believed to be more effective at removing very small particles, down to the range of 10 to 20 microns. Hence, it is intuitively expected that vortex separators do not perform as well as the traditional wet and dry basins, and filters. Whether this matters depends on the particle size distribution of the sediments in stormwater. If the distribution leans towards small material, there should be a marked difference between vortex separators and, say, traditional wet vaults. There are little data to support this conjecture

In comparison to other treatment technologies, such as wet ponds and grass swales, there are few studies of vortex separators. Only two of manufactured products currently available have been field tested. Two field studies have been conducted. Both achieved in excess of 80% removal of TSS. However, the test was conducted in the Northeast (New York state and Maine) where it is possible the stormwater contained significant quantities of deicing sand. Consequently, the influent TSS concentrations and particle size are both likely considerably higher than is found in California stormwater. These data suggest that if the stormwater particles are for the most part fine (i.e., less than 50 microns), vortex separators will not be as efficient as traditional treatment BMPs such as wet ponds and swales, if the latter are sized according to the recommendations of this handbook.

There are no equations that provide a straightforward determination of efficiency as a function of unit configuration and size. Design specifications of commercial separators are derived from empirical equations that are unique and proprietary to each manufacturer. However, some general relationships between performance and the geometry of a separator have been developed. CSO studies have found that the primary determinants of performance of vortex separators are the diameters of the inlet pipe and chamber with all other geometry proportional to these two.

Sullivan et al. (1982) found that performance is related to the ratios of chamber to inlet diameters, D2/D1, and height between the inlet and outlet and the inlet diameter, H1/D1, shown in Figure 3. The relationships are: as D2/D1 approaches one, the efficiency decreases; and, as the H1/D1 ratio decreases, the efficiency decreases. These relationships may allow qualitative comparisons of the alternative designs of manufacturers. Engineers who wish to apply these concepts should review relevant publications presented in the References.

Siting Criteria

There are no particularly unique siting criteria. The size of the drainage area that can be served by vortex separators is directly related to the capacities of the largest models.

Additional Design Guidelines

Vortex separators have two capacities if positioned as in-line facilities, a treatment capacity and a hydraulic capacity. Failure to recognize the difference between the two may lead to significant under sizing; i.e., too small a model is selected. This observation is relevant to three of the five products. These three technologies all are designed to experience a unit flow rate of about 24 gallons/square foot of separator footprint at the peak of the design treatment event. This is the horizontal area of the separator zone within the container, not the total footprint of the unit. At this unit flow rate, laboratory tests by these manufacturers have established that the performance will meet the general claims previously described. However, the units are sized to handle 100 gallons/square foot at the peak of the hydraulic event. Hence, in selecting a particular model the design engineer must be certain to match the peak flow of the design event to the stated treatment capacity, not the hydraulic capacity. The former is one-fourth the latter. If the unit is positioned as an off-line facility, the model selected is based on the capacity equal to the peak of the design treatment event.

Maintenance

Maintenance consists of the removal of accumulated material with an eductor truck. It may be necessary to remove and dispose the floatables separately due to the presence of petroleum product.

Maintenance Requirements

Remove all accumulated sediment, and litter and other floatables, annually, unless experience indicates the need for more or less frequent maintenance.

Cost

Manufacturers provide costs for the units including delivery. Installation costs are generally on the order of 50 to 100 % of the manufacturer's cost. For most sites the units are cleaned annually.

Cost Considerations

The different geometry of the several manufactured separators suggests that when comparing the costs of these systems to each other, that local conditions (e.g., groundwater levels) may affect the relative cost-effectiveness.

References and Sources of Additional Information

Field, R., 1972, The swirl concentrator as a combined sewer overflow regulator facility, EPA/R2-72-008, U.S. Environmental Protection Agency, Washington, D.C.

Field, R., D. Averill, T.P. O'Connor, and P. Steel, 1997, Vortex separation technology, Water Qual. Res. J. Canada, 32, 1, 185

Manufacturers technical materials

Sullivan, R.H., et al., 1982, Design manual – swirl and helical bend pollution control devices, EPA-600/8-82/013, U.S. Environmental Protection Agency, Washington, D.C.

Sullivan, R.H., M.M. Cohn, J.E. Ure, F.F. Parkinson, and G. Caliana, 1974, Relationship between diameter and height for the design of a swirl concentrator as a combined sewer overflow regulator, EPA 670/2-74-039, U.S. Environmental Protection Agency, Washington, D.C.

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Sullivan, R.H., M.M. Cohn, J.E. Ure, F.F. Parkinson, and G. Caliana, 1978, Swirl primary separator device and pilot demonstration, EPA600/2-78-126, U.S. Environmental Protection Agency, Washington, D.C.

Bioretention TC-32

Design Considerations

- Soil for Infiltration
- Tributary Area
- Slope
- Aesthetics
- Environmental Side-effects

Description

The bioretention best management practice (BMP) functions as a soil and plant-based filtration device that removes pollutants through a variety of physical, biological, and chemical treatment processes. These facilities normally consist of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants. The runoff's velocity is reduced by passing over or through buffer strip and subsequently distributed evenly along a ponding area. Exfiltration of the stored water in the bioretention area planting soil into the underlying soils occurs over a period of days.

Targeted Constituents

✓	Sediment	■
✓	Nutrients	▲
✓	Trash	■
✓	Metals	■
✓	Bacteria	■
✓	Oil and Grease	■
✓	Organics	■

Legend ***(Removal Effectiveness)***

● Low ■ High

▲ Medium

California Experience

None documented. Bioretention has been used as a stormwater BMP since 1992. In addition to Prince George's County, MD and Alexandria, VA, bioretention has been used successfully at urban and suburban areas in Montgomery County, MD; Baltimore County, MD; Chesterfield County, VA; Prince William County, VA; Smith Mountain Lake State Park, VA; and Cary, NC.

Advantages

- Bioretention provides stormwater treatment that enhances the quality of downstream water bodies by temporarily storing runoff in the BMP and releasing it over a period of four days to the receiving water (EPA, 1999).
- The vegetation provides shade and wind breaks, absorbs noise, and improves an area's landscape.

Limitations

- The bioretention BMP is not recommended for areas with slopes greater than 20% or where mature tree removal would

be required since clogging may result, particularly if the BMP receives runoff with high sediment loads (EPA, 1999).

- Bioretention is not a suitable BMP at locations where the water table is within 6 feet of the ground surface and where the surrounding soil stratum is unstable.
- By design, bioretention BMPs have the potential to create very attractive habitats for mosquitoes and other vectors because of highly organic, often heavily vegetated areas mixed with shallow water.
- In cold climates the soil may freeze, preventing runoff from infiltrating into the planting soil.

Design and Sizing Guidelines

- The bioretention area should be sized to capture the design storm runoff.
- In areas where the native soil permeability is less than 0.5 in/hr an underdrain should be provided.
- Recommended minimum dimensions are 15 feet by 40 feet, although the preferred width is 25 feet. Excavated depth should be 4 feet.
- Area should drain completely within 72 hours.
- Approximately 1 tree or shrub per 50 ft^2 of bioretention area should be included.
- Cover area with about 3 inches of mulch.

Construction/Inspection Considerations

Bioretention area should not be established until contributing watershed is stabilized.

Performance

Bioretention removes stormwater pollutants through physical and biological processes, including adsorption, filtration, plant uptake, microbial activity, decomposition, sedimentation and volatilization (EPA, 1999). Adsorption is the process whereby particulate pollutants attach to soil (e.g., clay) or vegetation surfaces. Adequate contact time between the surface and pollutant must be provided for in the design of the system for this removal process to occur. Thus, the infiltration rate of the soils must not exceed those specified in the design criteria or pollutant removal may decrease. Pollutants removed by adsorption include metals, phosphorus, and hydrocarbons. Filtration occurs as runoff passes through the bioretention area media, such as the sand bed, ground cover, and planting soil.

Common particulates removed from stormwater include particulate organic matter, phosphorus, and suspended solids. Biological processes that occur in wetlands result in pollutant uptake by plants and microorganisms in the soil. Plant growth is sustained by the uptake of nutrients from the soils, with woody plants locking up these nutrients through the seasons. Microbial activity within the soil also contributes to the removal of nitrogen and organic matter. Nitrogen is removed by nitrifying and denitrifying bacteria, while aerobic bacteria are responsible for the decomposition of the organic matter. Microbial processes require oxygen and can result in depleted oxygen levels if the bioretention area is not adequately

aerated. Sedimentation occurs in the swale or ponding area as the velocity slows and solids fall out of suspension.

The removal effectiveness of bioretention has been studied during field and laboratory studies conducted by the University of Maryland (Davis et al, 1998). During these experiments, synthetic stormwater runoff was pumped through several laboratory and field bioretention areas to simulate typical storm events in Prince George's County, MD. Removal rates for heavy metals and nutrients are shown in Table 1.

Table 1 Laboratory and Estimated Bioretention Davis et al. (1998); PGDER (1993)

Pollutant	Removal Rate
Total Phosphorus	70-83%
Metals (Cu, Zn, Pb)	93-98%
TKN	68-80%
Total Suspended Solids	90%
Organics	90%
Bacteria	90%

Results for both the laboratory and field experiments were similar for each of the pollutants analyzed. Doubling or halving the influent pollutant levels had little effect on the effluent pollutants concentrations (Davis et al, 1998).

The microbial activity and plant uptake occurring in the bioretention area will likely result in higher removal rates than those determined for infiltration BMPs.

Siting Criteria

Bioretention BMPs are generally used to treat stormwater from impervious surfaces at commercial, residential, and industrial areas (EPA, 1999). Implementation of bioretention for stormwater management is ideal for median strips, parking lot islands, and swales. Moreover, the runoff in these areas can be designed to either divert directly into the bioretention area or convey into the bioretention area by a curb and gutter collection system.

The best location for bioretention areas is upland from inlets that receive sheet flow from graded areas and at areas that will be excavated (EPA, 1999). In order to maximize treatment effectiveness, the site must be graded in such a way that minimizes erosive conditions as sheet flow is conveyed to the treatment area. Locations where a bioretention area can be readily incorporated into the site plan without further environmental damage are preferred. Furthermore, to effectively minimize sediment loading in the treatment area, bioretention only should be used in stabilized drainage areas.

Additional Design Guidelines

The layout of the bioretention area is determined after site constraints such as location of utilities, underlying soils, existing vegetation, and drainage are considered (EPA, 1999). Sites with loamy sand soils are especially appropriate for bioretention because the excavated soil can be backfilled and used as the planting soil, thus eliminating the cost of importing planting soil.

The use of bioretention may not be feasible given an unstable surrounding soil stratum, soils with clay content greater than 25 percent, a site with slopes greater than 20 percent, and/or a site with mature trees that would be removed during construction of the BMP.

Bioretention can be designed to be off-line or on-line of the existing drainage system (EPA, 1999). The drainage area for a bioretention area should be between 0.1 and 0.4 hectares (0.25 and 1.0 acres). Larger drainage areas may require multiple bioretention areas. Furthermore, the maximum drainage area for a bioretention area is determined by the expected rainfall intensity and runoff rate. Stabilized areas may erode when velocities are greater than 5 feet per second (1.5 meter per second). The designer should determine the potential for erosive conditions at the site.

The size of the bioretention area, which is a function of the drainage area and the runoff generated from the area is sized to capture the water quality volume.

The recommended minimum dimensions of the bioretention area are 15 feet (4.6 meters) wide by 40 feet (12.2 meters) long, where the minimum width allows enough space for a dense, randomly-distributed area of trees and shrubs to become established. Thus replicating a natural forest and creating a microclimate, thereby enabling the bioretention area to tolerate the effects of heat stress, acid rain, runoff pollutants, and insect and disease infestations which landscaped areas in urban settings typically are unable to tolerate. The preferred width is 25 feet (7.6 meters), with a length of twice the width. Essentially, any facilities wider than 20 feet (6.1 meters) should be twice as long as they are wide, which promotes the distribution of flow and decreases the chances of concentrated flow.

In order to provide adequate storage and prevent water from standing for excessive periods of time the ponding depth of the bioretention area should not exceed 6 inches (15 centimeters). Water should not be left to stand for more than 72 hours. A restriction on the type of plants that can be used may be necessary due to some plants' water intolerance. Furthermore, if water is left standing for longer than 72 hours mosquitoes and other insects may start to breed.

The appropriate planting soil should be backfilled into the excavated bioretention area. Planting soils should be sandy loam, loamy sand, or loam texture with a clay content ranging from 10 to 25 percent.

Generally the soil should have infiltration rates greater than 0.5 inches (1.25 centimeters) per hour, which is typical of sandy loams, loamy sands, or loams. The pH of the soil should range between 5.5 and 6.5, where pollutants such as organic nitrogen and phosphorus can be adsorbed by the soil and microbial activity can flourish. Additional requirements for the planting soil include a 1.5 to 3 percent organic content and a maximum 500 ppm concentration of soluble salts.

Soil tests should be performed for every 500 cubic yards (382 cubic meters) of planting soil, with the exception of pH and organic content tests, which are required only once per bioretention area (EPA, 1999). Planting soil should be 4 inches (10.1 centimeters) deeper than the bottom of the largest root ball and 4 feet (1.2 meters) altogether. This depth will provide adequate soil for the plants' root systems to become established, prevent plant damage due to severe wind, and provide adequate moisture capacity. Most sites will require excavation in order to obtain the recommended depth.

Planting soil depths of greater than 4 feet (1.2 meters) may require additional construction practices such as shoring measures (EPA, 1999). Planting soil should be placed in 18 inches or greater lifts and lightly compacted until the desired depth is reached. Since high canopy trees may be destroyed during maintenance the bioretention area should be vegetated to resemble a terrestrial forest community ecosystem that is dominated by understory trees. Three species each of both trees and shrubs are recommended to be planted at a rate of 2500 trees and shrubs per hectare (1000 per acre). For instance, a 15 foot (4.6 meter) by 40 foot (12.2 meter) bioretention area (600 square feet or 55.75 square meters) would require 14 trees and shrubs. The shrub-to-tree ratio should be 2:1 to 3:1.

Trees and shrubs should be planted when conditions are favorable. Vegetation should be watered at the end of each day for fourteen days following its planting. Plant species tolerant of pollutant loads and varying wet and dry conditions should be used in the bioretention area.

The designer should assess aesthetics, site layout, and maintenance requirements when selecting plant species. Adjacent non-native invasive species should be identified and the designer should take measures, such as providing a soil breach to eliminate the threat of these species invading the bioretention area. Regional landscaping manuals should be consulted to ensure that the planting of the bioretention area meets the landscaping requirements established by the local authorities. The designers should evaluate the best placement of vegetation within the bioretention area. Plants should be placed at irregular intervals to replicate a natural forest. Trees should be placed on the perimeter of the area to provide shade and shelter from the wind. Trees and shrubs can be sheltered from damaging flows if they are placed away from the path of the incoming runoff. In cold climates, species that are more tolerant to cold winds, such as evergreens, should be placed in windier areas of the site.

Following placement of the trees and shrubs, the ground cover and/or mulch should be established. Ground cover such as grasses or legumes can be planted at the beginning of the growing season. Mulch should be placed immediately after trees and shrubs are planted. Two to 3 inches (5 to 7.6 cm) of commercially-available fine shredded hardwood mulch or shredded hardwood chips should be applied to the bioretention area to protect from erosion.

Maintenance

The primary maintenance requirement for bioretention areas is that of inspection and repair or replacement of the treatment area's components. Generally, this involves nothing more than the routine periodic maintenance that is required of any landscaped area. Plants that are appropriate for the site, climatic, and watering conditions should be selected for use in the bioretention cell. Appropriately selected plants will aide in reducing fertilizer, pesticide, water, and overall maintenance requirements. Bioretention system components should blend over time through plant and root growth, organic decomposition, and the development of a natural

soil horizon. These biologic and physical processes over time will lengthen the facility's life span and reduce the need for extensive maintenance.

Routine maintenance should include a biannual health evaluation of the trees and shrubs and subsequent removal of any dead or diseased vegetation (EPA, 1999). Diseased vegetation should be treated as needed using preventative and low-toxic measures to the extent possible. BMPs have the potential to create very attractive habitats for mosquitoes and other vectors because of highly organic, often heavily vegetated areas mixed with shallow water. Routine inspections for areas of standing water within the BMP and corrective measures to restore proper infiltration rates are necessary to prevent creating mosquito and other vector habitat. In addition, bioretention BMPs are susceptible to invasion by aggressive plant species such as cattails, which increase the chances of water standing and subsequent vector production if not routinely maintained.

In order to maintain the treatment area's appearance it may be necessary to prune and weed. Furthermore, mulch replacement is suggested when erosion is evident or when the site begins to look unattractive. Specifically, the entire area may require mulch replacement every two to three years, although spot mulching may be sufficient when there are random void areas. Mulch replacement should be done prior to the start of the wet season.

New Jersey's Department of Environmental Protection states in their bioretention systems standards that accumulated sediment and debris removal (especially at the inflow point) will normally be the primary maintenance function. Other potential tasks include replacement of dead vegetation, soil pH regulation, erosion repair at inflow points, mulch replenishment, unclogging the underdrain, and repairing overflow structures. There is also the possibility that the cation exchange capacity of the soils in the cell will be significantly reduced over time. Depending on pollutant loads, soils may need to be replaced within 5-10 years of construction (LID, 2000).

Cost

Construction Cost

Construction cost estimates for a bioretention area are slightly greater than those for the required landscaping for a new development (EPA, 1999). A general rule of thumb (Coffman, 1999) is that residential bioretention areas average about $3 to $4 per square foot, depending on soil conditions and the density and types of plants used. Commercial, industrial and institutional site costs can range between $10 to $40 per square foot, based on the need for control structures, curbing, storm drains and underdrains.

Retrofitting a site typically costs more, averaging $6,500 per bioretention area. The higher costs are attributed to the demolition of existing concrete, asphalt, and existing structures and the replacement of fill material with planting soil. The costs of retrofitting a commercial site in Maryland, Kettering Development, with 15 bioretention areas were estimated at $111,600.

In any bioretention area design, the cost of plants varies substantially and can account for a significant portion of the expenditures. While these cost estimates are slightly greater than those of typical landscaping treatment (due to the increased number of plantings, additional soil excavation, backfill material, use of underdrains etc.), those landscaping expenses that would be required regardless of the bioretention installation should be subtracted when determining the net cost.

Perhaps of most importance, however, the cost savings compared to the use of traditional structural stormwater conveyance systems makes bioretention areas quite attractive financially. For example, the use of bioretention can decrease the cost required for constructing stormwater conveyance systems at a site. A medical office building in Maryland was able to reduce the amount of storm drain pipe that was needed from 800 to 230 feet - a cost savings of $24,000 (PGDER, 1993). And a new residential development spent a total of approximately $100,000 using bioretention cells on each lot instead of nearly $400,000 for the traditional stormwater ponds that were originally planned (Rappahanock,). Also, in residential areas, stormwater management controls become a part of each property owner's landscape, reducing the public burden to maintain large centralized facilities.

Maintenance Cost

The operation and maintenance costs for a bioretention facility will be comparable to those of typical landscaping required for a site. Costs beyond the normal landscaping fees will include the cost for testing the soils and may include costs for a sand bed and planting soil.

References and Sources of Additional Information

Coffman, L.S., R. Goo and R. Frederick, 1999: Low impact development: an innovative alternative approach to stormwater management. Proceedings of the 26th Annual Water Resources Planning and Management Conference ASCE, June 6-9, Tempe, Arizona.

Davis, A.P., Shokouhian, M., Sharma, H. and Minami, C., "Laboratory Study of Biological Retention (Bioretention) for Urban Stormwater Management," *Water Environ. Res.*, 73(1), 5-14 (2001).

Davis, A.P., Shokouhian, M., Sharma, H., Minami, C., and Winogradoff, D. "Water Quality Improvement through Bioretention: Lead, Copper, and Zinc," *Water Environ. Res.*, accepted for publication, August 2002.

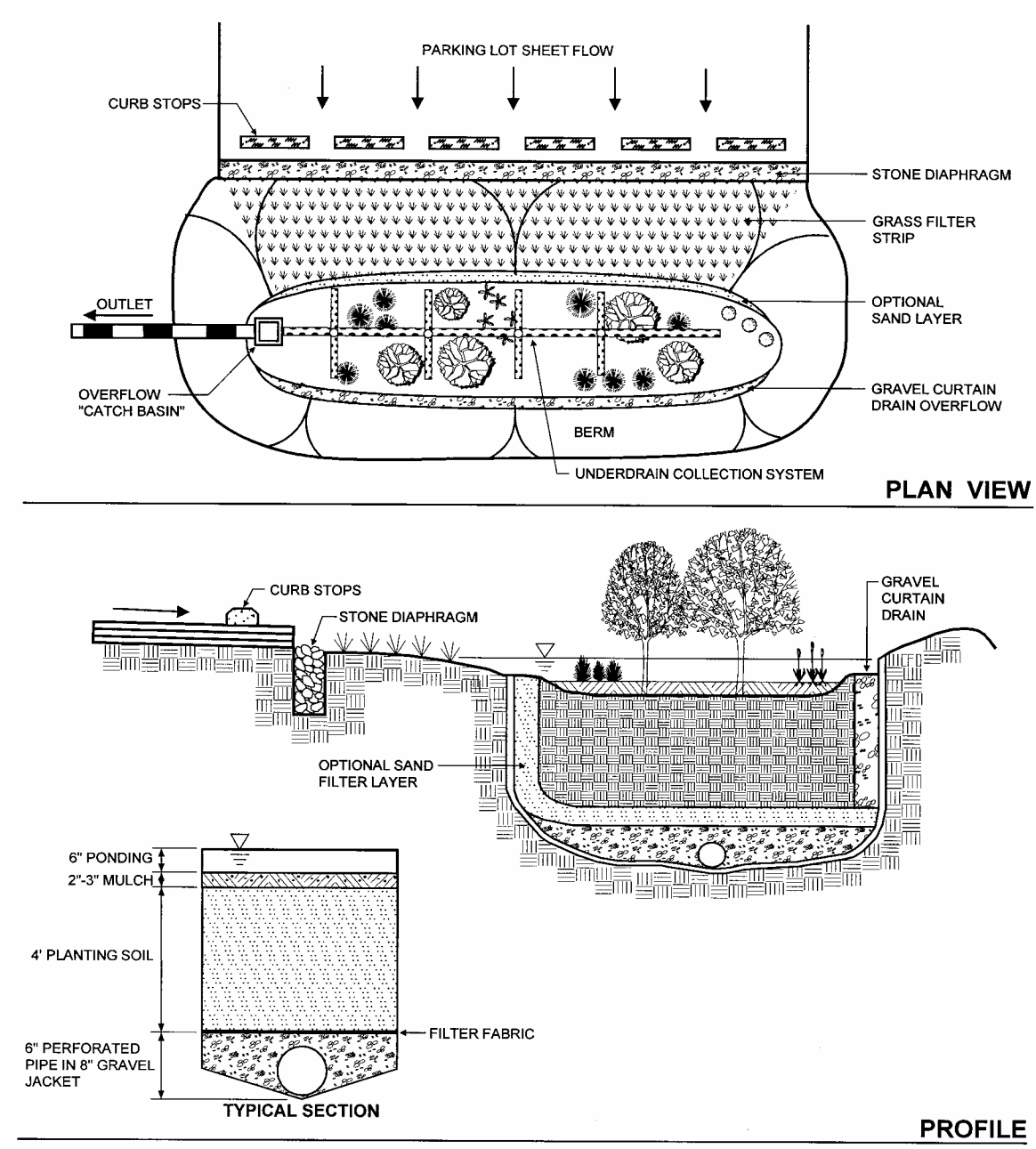
Kim, H., Seagren, E.A., and Davis, A.P., "Engineered Bioretention for Removal of Nitrate from Stormwater Runoff," *WEFTEC 2000 Conference Proceedings on CDROM Research Symposium, Nitrogen Removal*, Session 19, Anaheim CA, October 2000.

Hsieh, C.-h. and Davis, A.P. "Engineering Bioretention for Treatment of Urban Stormwater Runoff," *Watersheds 2002, Proceedings on CDROM Research Symposium*, Session 15, Ft. Lauderdale, FL, Feb. 2002.

Prince George's County Department of Environmental Resources (PGDER), 1993. Design Manual for Use of *Bioretention in Stormwater Management*. Division of Environmental Management, Watershed Protection Branch. Landover, MD.

U.S. EPA Office of Water, 1999. Stormwater Technology Fact Sheet: Bioretention. EPA 832-F-99-012.

Weinstein, N. Davis, A.P. and Veeramachaneni, R. "Low Impact Development (LID) Stormwater Management Approach for the Control of Diffuse Pollution from Urban Roadways," *5th International Conference Diffuse/Nonpoint Pollution and Watershed Management Proceedings*, C.S. Melching and Emre Alp, Eds. 2001 International Water Association



Schematic of a Bioretention Facility (MDE, 2000)

Trash Storage Areas SD-32

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

The Complete Guide to Residential Recycling

Northwest Riverside County

Banning, Calimesa, Corona, Eastvale, Jurupa Valley, Moreno Valley, Norco, Riverside

Used Oil and Filters

RECYCLE USED OIL

Recycling used motor oil and filters is easy!
Simply take them to one of the certified collection centers below. **It's free!**

Banning

AutoZone
3453-A W. Ramsey St.
(951) 849-7626

Certified Tire & Service Center Goodyear
1820 W. Ramsey St.
(951) 849-5028

Diamond Hills Auto Group
4545 W. Ramsey St.
(951) 849-7861

Cruz Industrial Truck Inc.
313 South Gallaher Way
(951) 849-7861

Corona

AutoZone
501 North McKinley St.
(951) 278-2073

AutoZone
1280 East Ontario Ave.
(951) 273-1583

AutoZone
1014 W. 6th St.
(951) 371-4730

Corona Nissan
2575 Wardlow Rd.
(877) 322-6739

Firestone Store
522 N. Main St.
(951) 735-4101

Goodyear Mountain View Tire
1630 E. Ontario Ave.
(951) 808-0818

Hamner Towing & Service Center
2125 Railroad St.
(951) 734-9331

Heavy Equipment Rentals
13013 Temescal Cyn. Rd.
(951) 609-4623

Jiffy Lube
906 W. 6th St.
(951) 549-9060

Jiffy Lube
1600 E. Ontario Blvd.
(951) 284-0922

O'Reilly Autoparts
1220 Magnolia Ave.
Suite 102
(951) 273-9891

O'Reilly Autoparts
1142 W. 6th St.
(951) 735-0936

Pep Boys
581 N. Main St.
(951) 279-9230

Quality Toyota
1700 W. Sixth St.
(951) 734-6020

Ramona Tire
304 W. Sixth St.
(951) 734-1222

Certified Tire and Service
624 N. Main St.
(951) 284-3443

Certified Tire and Service
2189 Sampson Ave., # 111
(951) 547-2080

Team Dykstra Carwash & Lube Center
2315 California Ave.
(951) 898-6482

Eastvale

Mountain View Tire
6080 Hamner Ave., #105
(909) 484-9497

Autozone
14228 Schleisman Rd.
(951) 898-4712

Jurupa Valley

D & B Automotive and Transmission
4321 Campbell St., #C
(951) 681-6483

Firestone Complete Auto Care
8360 Limonite Ave.
(951) 934-7304

LKQ Pick A Part
3760 Pyrite St.
(800) 749-2720

O'Reilly Autoparts
8702 Limonite Ave.
(951) 685-0822

Used Oil and Filters

RECYCLE
USED OIL FILTERS

You can also find Certified Collection Centers on the Cal Recycle Website:

www.calrecycle.ca.gov/recycle

Scher Goodyear Tire #24
6072 Camino Real
(951) 685-1000

AutoZone
3782 Riverview Dr.
(951) 275-0301

Moreno Valley

Auto Express Moreno Valley
24035 Sunnymead Blvd., #G
(951) 924-6363

AutoZone
27660 Eucalyptus Ave.
(951) 242-5190

AutoZone
16210 Perris Blvd.
(951) 242-2026

AutoZone
24570 Alessandro Blvd.
(951) 242-8439

AutoZone
12601 Perris Blvd.
(951) 242-4353

AutoZone
23510 Sunnymead Blvd.
(951) 924-5460

Buds Moreno Valley Tire Pros
22510 Alessandro Blvd.
(951) 776-7211

Certified Tire & Service Center
16190 Perris Blvd.
(951) 243-5655

Certified Tire & Service Center
23920 Alessandro Blvd., #A
(951) 656-6466

Certified Tire & Service Center
23135 Hemlock Ave.
(951) 369-0025

Firestone
24673 Alessandro Blvd.
(951) 242-6631

Integrity Tire
24901 Sunnymead Blvd.
(951) 656-6466

Moss Bros. Chevrolet
12625 Auto Mall Dr.
(951) 658-3145

Moss Brothers Honda
27910 Eucalyptus Ave.
(951) 486-9366

Moss Brothers Buick, GMC
8146 Auto Drive
(951) 242-2223

Moss Brothers Chrysler Jeep Dodge
27810 Eucalyptus Ave.
(951) 486-9288

Moss Brothers Toyota
12630 Motor Way
(951) 247-8000

Moss Brothers Volkswagen
27750 Eucalyptus Ave.
(951) 485-4188

O'Reilly Autoparts #1304
24021 Alessandro Blvd., #C
(951) 242-0641

O'Reilly Autoparts #1704
12240 Perris Blvd.
(951) 247-5509

Pep Boys #724
23470 Sunnymead Blvd.
(951) 247-4564

Valvoline Instant Oil Change
23165 Hemlock Ave.
(951) 247-1873

Norco

AutoZone #3340
1404 Hamner Ave.
(951) 817-9432

Browning Dodge Chrysler Jeep Ram
1983 Hamner Ave.
(951) 272-3110

Jiffy Lube
2925 Hamner Ave.
(951) 284-0210

Goodyear Mountain View Tire
2935 Hamner Ave.
(877) 872-0133

O'Reilly Autoparts
1050 Hamner Ave.
Suite 1616
(951) 898-1283

Used Oil and Filters

RECYCLE USED OIL

Riverside

Auto Express Riverside
11850 Magnolia Ave.
(951) 351-8875

AutoZone
7315 Indiana Ave.
(951) 637-6701

AutoZone
1947 University Ave.
(951) 788-4013

AutoZone
4195 Van Buren Blvd.
(951) 359-7760

AutoZone
19486 Van Buren Blvd.
(951) 653-5585

AutoZone
10249 Arlington Ave.
(951) 688-0296

AutoZone
6047 Magnolia Ave.
(951) 784-9201

AutoZone
3400 La Sierra Ave.
(951) 354-0781

BMW Of Riverside
3060 Adams St.
(951) 785-4444

Bud's Tire and Wheel
8651 Indiana Ave.
(951) 776-7211

Bud's Tire and Wheel Orangecrest
15967 Wood Rd.
(951) 776-7211

Goodyear Certified Tire & Service Center
8994 Trautwein Rd.
(951) 653-6800

Goodyear Certified Tire & Service Center
7341 Indiana Ave.
(951) 343-8535

Dutton Motor Company
8201 Auto Dr.
(951) 687-2020

Firestone Store
4199 Market St.
(951) 289-7811

Firestone Store
10091 Magnolia Ave.
(951) 977-5863

George Fritts Auto Repair
91 Commercial Ave.
(951) 788-9043

Jiffy Lube
3693 La Sierra Ave.
(951) 359-8999

Malcolm Smith Motorsports
7599 Indiana Ave.
(951) 687-1300

Moss Motors Dodge
8151 Auto Center Dr.
(951) 688-6200

O'Reilly Autoparts
6160 Arlington Ave.
(951) 689-0944

O'Reilly Autoparts
3790 Jurupa Ave.
(951) 682-6082

O'Reilly Autoparts
1691 University Ave.
(951) 222-2900

O'Reilly Autoparts
9929 Magnolia Ave.
(951) 359-3041

O'Reilly Autoparts
18570 Van Buren Blvd.
(951) 780-8721

Pep Boys #690
10831 Magnolia Ave.
(951) 354-0100

Raceway Ford
5900 Sycamore Canyon Blvd.
(951) 784-1000

Raceway Nissan
6030 Sycamore Canyon Blvd.
(951) 571-9300

Riverside Mitsubishi and Kia
8100 Auto Dr.
(951) 509-1000

Used Oil and Filters

RECYCLE
USED OIL FILTERS

Riverside Nissan
8330 Indiana Ave.
(951) 509-6581

Singh Chevrolet
8200 Auto Center Dr.
(951) 688-8111

Spoiled
2634 E. Alessandro Blvd.
(951) 656-2300

Toyota of Riverside
7870 Indiana Ave.
(951) 687-1622

Valvoline Instant Oil Change
3504 Central Ave.
(951) 367-0411

Valvoline Instant Oil Change
7450 Mission Grove
Pkwy. South
(951) 780-2500

Valvoline Instant Oil Change
7437 Arlington Ave.
(951) 689-7805

Valvoline Instant Oil Change
3417 Arlington Ave.
(951) 788-7725

Valvoline Instant Oil Change
18681 Van Buren Blvd.
(951) 789-2882

Valvoline Instant Oil Change
3335 Iowa Blvd.
(951) 367-0147

Walters Mercedes-Benz
3213 Adam's St.
(888) 656-3915

Walters Porsche/Audi
3210 Adams St.
(888) 656-3915

Curbside pickup of used oil is available in some cities in Riverside County. Contact your waste hauler for more information. Waste hauler contact information is provided on the back page of this guide.

CalRecycle

You may not need to change your oil every 3000 miles! Save time, money, and the environment by visiting **www.checkyournumber.org** to find out what your manufacturer recommended oil change interval is. Check your number is provided by CalRecycle.

Locations marked with a also accept oil filters.

Please DO NOT drop off oil when the location is closed. **For more information about used oil collection centers call 800-350-4OIL.**

Household Hazardous Waste

Examples of household waste that are considered hazardous include:

- Batteries (all types)
- Electronic Waste
- Paint
- Used Oil and Antifreeze
- Sharps/ Needles

Permanent Household Hazardous Waste Collection Centers

Lake Elsinore Area (Closed January and December)

Lake Elsinore Regional Permanent HHW Collection Facility
512 N. Langstaff Street, Lake Elsinore, 92530
Open first Saturday of the month*, 9:00 a.m. to 2:00 p.m.
*Except holiday weekends and during inclement weather.

Riverside Area

Agua Mansa Regional Permanent HHW Collection Facility
1780 Agua Mansa Road, Riverside, 92509
Open non-holiday Saturdays*, 9:00 a.m. to 2:00 p.m.
*Except during inclement weather.

Regional ABOP Collection Centers (Antifreeze, Batteries, Oil and Oil Filters, and Latex Paint ONLY)

Murrieta Area

County Road Yard
25315 Jefferson Avenue, Murrieta, 92562
Open non-holiday Saturdays, 9:00 a.m. to 2:00 p.m.

Beaumont / Banning Area

Lamb Canyon Landfill
16411 Lamb Canyon Rd, Beaumont, 92223
Open non-holiday Saturdays, 9:00 a.m. to 2:00 p.m.

These sites accept residential waste only. For more information, contact the Riverside County Household Hazardous Waste Department Hotline at **800-304-2226 or 951-486-3200, or visit:**
www.rivcowm.org/opencms/hhw/index.html

Household Hazardous Waste

Below is a list of materials accepted at permanent HHW collection sites.*

Chemicals and Cleaners

Adhesives
Air Freshener
Aluminum Cleaners
Ammonia
Antifreeze
Brake Fluid
Carburetor Cleaner
Caulking
Chlorine Bleach
Chrome Polish
Disinfectant
Drain Cleaner
Engine Degreaser
Fertilizer
Fiberglass and Resins
Flea Powder
Floor / Surface Cleaners
Fungicides
Furniture Polish
Gas / Diesel Fuel
Glue
Gun Cleaner
Hair Dye
Hobby Chemicals
Insecticides / Pesticides
Kerosene / Lamp Oil
Lighter Fluid
Motor Oil
Mercury Devices
Oven Cleaner
Paint - Latex / Oil Based
Paint Stripper / Thinner
Photo Chemicals
Pool / Spa Chemicals
Rodent Bait / Poison
Roof Coating
Shoe Dye
Spot Remover
Transmission Fluid
Turpentine
Varnish
Weed Killer / Herbicide
Wood Preservative

Aerosols and Tanks

Aerosol Insecticides
Aerosol Cans
BBQ Propane Tanks
Camp Propane Tanks

E-Waste and Batteries

Batteries (all types)
Electronic Devices
Fluorescent Bulbs / Tubes
Old TVs and Computers

Medical Waste

Sharps / Needles

Please DO NOT bring the following types of materials (If you have any of these wastes please call (951) 486-3200):

Unacceptable Materials

Business, Non-Profit, or Out-of-County Waste
Explosives / Ammunition
Radioactive or Remediation Materials
Medical / Infectious Waste (Except Sharps)
Asbestos
Appliances
Tires
55 or 30 Gallon Drums
Compressed Gas Cylinders >40 lbs
Trash

*Maximum Chemical Load: 5 Gallons or 50lbs per trip. Residential waste only, no business waste accepted.

Recycling

What can go into your curbside recycling bins? Not sure what you can recycle? Check out the list below.

Paper and Cardboard

- Books and Coloring Books
- Cardboard
- Cardstock and Construction Paper
- Office Paper
- Egg Cartons
- Clean Food Boxes
- Junk Mail and Envelopes
- Magazines and Newspapers
- Notebook Paper
- Paper Bags
- Telephone Books

Metal

- Aluminum and Steel Cans
- Clean Aluminum Foil
- Scrap Metal

Glass Jars and Bottles

- Glass Jars
- Beverage Bottles

Plastic Bottles and Grocery Bags

- Plastic Milk Jugs
- Plastic Beverage Containers
- Plastic Grocery Bags

Recycling

Used Tires

Used tires are accepted at various locations in Riverside County. There is generally a fee to dispose of tires. The following locations accept tires:

Badlands Landfill

31125 Ironwood Ave., Moreno Valley, 92553

Lamb Canyon Landfill

16411 Lamb Canyon Rd., Beaumont, 92223

Visit www.rivcowm.org/opencms/landfill_info/landfill_fees.html for information on current landfill pricing.

BAS Recycling, Inc.

14050 Day St., Moreno Valley, 92553
(909) 383-7050
Call facility for pricing.

Electronic Waste Recyclers

Badlands, Lamb Canyon, and El Sobrante Landfills accept up to 2 CRT devices (e.g. computer monitors or TVs) per day for recycling at **no cost** during operating hours. The following recyclers also accept electronic waste:

Gold'n West Surplus, Corona - (951) 371-2020
Graebel Los Angeles Movers, Corona - (800) 373-6552
WM Recycle America, Jurupa Valley - (951) 681-4297
Waste Management, Inc., Moreno Valley - (951) 242-0421
Your Neighborhood Recycling, Moreno Valley - (951) 796-7673
1-800-GOT-JUNK, Riverside - (909) 425-9722

Other Recycling Facilities

For a complete list of recycling facilities visit www.calrecycle.ca.gov .

Earth911.com also provides valuable information and resources about recycling and recycling facilities.

Reycling Centers

What should you do with those empty cans and bottles? Below is a list of centers that accept beverage containers for recycling*.

Banning

Banning Recycling
284 S. 8th St.
(951) 922-9236

Ramsey Recyling
1243 E. Ramsey St.
(951) 849-5997

Calimesa

rePlanet
1155 Calimesa Blvd.
(877) 737-5263

Corona

NexCycle
535 N. McKinley St.
(800) 969-2020

rePlanet
260 W. Foothill Pkwy.
(951) 520-1700

rePlanet
1193 Magnolia Ave.
(877) 737-5263

rePlanet
1288 Border Ave.
(877) 737-5263

Sanchez Recycling Inc.
1130 W. 6th St.
(714) 793-9934

Six Pac Recycling
1430 E. 6th St.
(951) 734-2910

Eastvale

rePlanet
7070 Archibald Ave.
(951) 520-1700

rePlanet
12660 Limonite Ave.
(951) 520-1700

Jurupa Valley

Etiwanda Recycling
6102 Etiwanda Ave.
(951) 263-6173

Recycle Kingdom
4868 Etiwanda Ave.
(626) 617-1859

rePlanet
11070 Limonite Ave.
(877) 737-5263

Salazar's Recycler
5666 Etiwanda Ave.
(951) 966-6408

EarthWize Recycling
9075 Mission Blvd.
(909) 933-2773

Jurupa Valley Recycling Collection Center
6315 Pedley Rd.
(951) 681-0382

Pedley Recycling Center
7850 Limonite Ave.
(951) 823-1383

Pedley Vet Recycling
8980 Limonite Ave.
(909) 856-9053

Recycling Services Centers
6565 Mission Blvd.
(951) 685-4430

Renovate Recycling Center
8800 Limonite Ave.
(714) 453-7028

rePlanet
9155 Jurupa Rd.
(877) 737-5263

Rubidoux Recycling Center
5675 Mission Blvd.
(951) 823-1353

Moreno Valley

EarthWize Recycling
24525 Alessandro Blvd.
(909) 923-2773

Menlo Recycling Center
22405 Goldencrest Dr.
Bldg., A.
(951) 653-5565

Moreno Valley Recycling
22862 Alessandro Blvd.
(323) 732-9253

Moreno Valley Recycling 2
24135 Sunnymead Blvd.
(213) 625-8165

Moreno Valley Recycling 3
14940 Perris Blvd.
(323) 732-9253

Recycling Centers

rePlanet
23575 Sunnymead Ranch Pkwy.
(951) 520-1700

rePlanet
27100 Eucalyptus Ave.
(951) 520-1700

rePlanet
25900 Iris Ave.
(951) 520-1700

Smittys
25073 Sunnymead Blvd., #D-14
(951) 453-0806

Worasing Recycling
15928 Perris Blvd.
(951) 323-7532

Zuniga Recycling
21524 Dracea Ave.
(866) 718-7150

Norco

E&M Recycling
1943 River Rd.
(323) 732-9253

Norco Feed and Recycling
4409 California Ave.
(877) 247-6923

rePlanet
2790 Hamner Ave.
(877) 737-5263

Riverside

AAA Recycle
5490 26th St.
(951) 781-8046

ABC
10330 Hole Ave., #B-9
(909) 742-7129

Cash 4 Cans
7633 Cypress Ave.
(951) 352-5995

El Taray Recycling
12702 Magnolia Ave., #11
(714) 222-4047

rePlanet
4250 Van Buren Blvd.
(951) 520-1700

rePlanet
6155 Magnolia Ave.
(951) 520-1700

rePlanet
5225 Canyon Crest Dr.
(951) 520-1700

rePlanet
315 E. Alessandro Blvd.
(951) 520-1700

rePlanet
3900 Chicago Ave.
(951) 520-1700

rePlanet
2995 Iowa Ave.
(951) 520-1700

rePlanet
6160 Arlington Ave.
(951) 520-1700

rePlanet
9225 Magnolia Ave.
(951) 520-1700

rePlanet
17050 Van Buren Blvd.
(951) 520-1700

rePlanet
3420 La Sierra Ave.
(951) 520-1700

rePlanet
4680 La Sierra Ave.
(951) 520-1700

Riverside Scrap Iron and Metal Corp.
2993 6th St.
(951) 686-2129

Robert A. Nelson Transfer Station
1830 Agua Mansa Rd.
(951) 786-0639

rePlanet
4250 Van Buren Blvd.
(951) 520-1700

*Some recycling centers may accept other recyclable materials. It is advisable to call the center and confirm this, as well as operating hours, before visiting.

Fore more information about local recycling centers visit the **CalRecycle** website: **www.calrecycle.ca.gov.**

Types of Plastic

Confused about the types of plastic and if they can be recycled? Many plastic containers display an identification code that indicates what they are made from. Below are the 7 codes.

1 PETE

#1: Polyethylene Terephthalate (PETE or PET)
Used to create 2-liter soda bottles, water bottles, cooking oil bottles, peanut butter jars.
The most commonly accepted plastic for recycling.

2 HDPE

#2: High Density Polyethylene
Used to create detergent bottles, milk and water jugs, grocery bags, yogurt cups.
Commonly accepted for recycling. Bags can be recycled at some large grocery stores.

3 V

#3: Polyvinyl Chloride
Used to create plastic pipes, outdoor furniture, shrink-wrap, liquid detergent containers, flooring, showercurtains.
Not currently accepted for recycling.

4 LDPE

#4: Low Density Polyethylene
Used to create food storage containers, cellophane wrap, dry cleaning bags, produce bags, trash can liners.
Not commonly recycled, some large grocery stores accept LDPE bags.

5 PP

#5: Polypropylene
Used to create ketchup bottles, aerosol caps, drinking straws, yogurt containers.
Not commonly accepted for recycling.

6 PS

#6: Polystyrene
Also known as "Styrofoam." Used to make coffee cups, take-out food packaging, egg cartons, and packaging "peanuts."
Sometimes accepted for recycling and made into the same products.

7 OTHER

#7: Other
All other plastic resins or a mixture of resins used to make reusable water bottles, Tupperware, biodegradable and compostable plastics.
Not commonly accepted for recycling.

Composting Basics

Got food scraps and yardwaste? Below is a quick guide to Backyard Composting.

1. Select a good spot for composting

- Sun or shade
- Convenient to kitchen or garden, and close to a source of water
- Keep away from structures and wood, as moisture can hasten decay
- Place only on bare ground, as organisms from soil are needed

2. Know the Ingredients

Nitrogen - Green materials - grass clippings, fresh leaves and twigs, vegetable and fruit trimmings, coffee grounds and filters, and non-meat eating animal manures.

Carbon - Brown materials that have released their nitrogen - dry and brittle leaves and grasses, straw, wood chips, corn stalks, shredded newspaper, paper towels, napkins, and cardboard.

Water - The correct moisture level should be about the same as a damp wrung out sponge. A few drops should fall when squeezed in your hand.

Air - Oxygen is very important to the bacteria, fungi, and microorganisms that are working in the pile to breakdown the organic material.

Do Not Add - Meat, dairy products, fats, oils, waste from meat eating animals (dogs and cats), thorny plant material, or diseased plant material.

2. Know the Methods

Aerobic - Pile equal parts green and brown material on ground or in a bin in a 3'x3'x3' heap, water well, and cover with a tarp, carpet or opaque plastic sheet. The pile will heat up (120 to 160 degrees), and needs to be turned after a few days, once it has cooled. Turn the pile weekly and continue composting until the pile has a dark rich look like chocolate cake and the things you put in don't look like their original form. After the compost is done, water well, cover, and let it rest for one to two weeks to make sure it is completely done and the nitrogen has a chance to stabilize. If the compost is used too soon it could rob nutrients from the surrounding plants. Remove large chunks and add them to the next compost pile.

Anerobic - Similar to the Aerobic method, but there is no need to actively turn the material. It may take longer (1-2 years), but is still beneficial to your garden. Just pile the stuff, water, cover, and wait.

For more detailed information on composting, free workshops, or other methods, such as **Vermicomposting**, visit www.rivcowm.org and search for composting.

Source Reduction

The best way to reduce waste is to prevent it!

Buy Responsibly

Reduce packaging waste - Look for products that reduce packaging, or purchase in bulk to reduce the amount of packaging needed.

Look for products containing recycled material - Recycled paper products, motor oil, and even pens and pencils are just a few examples of products that reduce waste.

Consider reusable products - Buy reusable water bottles and sturdy utensils and plates that can be washed and used again.

Get it "For Here," or bring your own - Many coffee shops will provide drinks to their customers in ceramic mugs rather than paper cups if requested. Just ask! Reusable tumblers are also a great alternative to paper cups, and many establishments will even give a small discount to those who bring their own!

Borrow, rent, or share - Why buy something if you are only going to use it once? Items such as tools, party decorations, and even newspapers and magazines can be shared with your friends, family, and/or community.

Purchase rebuilt, remanufactured, or refurbished - Many electronics such as cell phones, computers, and media players can be purchased "refurbished" at a sometimes substantial price reduction. This conserves the resources needed to manufacture a new product.

Choose Non-Toxic

Choose products that contain only non-toxic materials, or try one of these **homemade alternatives**:

- Instead of glass cleaner, dilute 1 cup of vinegar in 1 quart of water.
- To open clogged drains, flush with a mixture of boiling water, and equal parts baking soda and vinegar.

For more information on non-toxic alternatives, visit the California Coastal Commission website:
http://www.coastal.ca.gov/ccbn/lesstoxic.html

Source Reduction

Plastic bags and junk mail contribute to a significant amount of un-needed waste. You can lessen their impact by Reducing, Reusing, and Recycling.

Plastic Bags

Reduce: BYOB (Bring Your Own Bag) - Use reusable canvas or cloth bags rather than plastic bags, and keep them in your car. Not all items need a bag, just say "no, thank you."

Reuse - Plastic grocery bags can serve multiple purposes, such as trash can liners or for pet waste.

Recycle - If you find that you must use a plastic bag, recycle it when you are finished. Most large supermarkets and pharmacies offer free recycling of plastic bags.

Junk Mail Reduction

You can reduce the amount of unwanted junk mail in your mailbox by simply mailing a postcard to the following addresses, requesting your name be removed from their mailing list. Be sure to include your full name, your address(es), your signature, and the date.

Mail Preference Service
Attn.: Dept. 10088342
PO Box 282
Carmel, NY 10512

ADVO
Consumer Assistance
PO Box 249
Windsor, CT 06095

Harte-Hanks Circulation
C/O Pennysaver
2830 Orbiter St.
Brea, CA 92821

Valpak Direct Marketing Systems, Inc.
8605 Largo Lakes Dr.
Largo, FL 33773

Credit Card Junk Mail
Call (888)5-OPT OUT (888-567-8688)

City / County Resources

City of Banning - Recycling and Waste Hauling Information | (951) 922-3105
http://www.ci.banning.ca.us/index.aspx?NID=380

City of Calimesa - Public Works / Engineering Department | (909) 795-9801
http://www.cityofcalimesa.net/publicworks.htm

City of Corona - Trash and Recycling | (951) 736-2400
http://www.discovercorona.com/city-departments/public-works/refuse-and-recycling.aspx

City of Eastvale - Recycling / Solid Waste / Street Sweeping | (951) 361-0900
http://www.eastvalecity.org/index.aspx?page=140

City of Jurupa Valley - Local Resources | (951) 358-7387
http://www.jurupavalley.org/resources.php

City of Moreno Valley - Waste Disposal and Recycling | (951) 413-3100
http://www.moreno-valley.ca.us/resident_services/waste/index-waste.shtml

City of Norco - Trash / Recycling | (951) 270-5656
http://www.norco.ca.us/about/welcome_residents/trash_recycling.asp

City of Riverside - Trash & Recycling | (951) 826-5311
http://www.riversideca.gov/trash

County of Riverside - Riverside County Waste Management Department
http://www.rivcowm.org | (951) 486-3200

Western Riverside Council of Governments
http://www.wrcog.cog.ca.us | (800) 350-4645

Waste Haulers

Waste Management, Inc. - (951) 280-5400 - www.wm.com
Serves: All Cities

Burrtec - (951) 786-9660 - www.burrtec.com
Serves: Eastvale, Jurupa Valley, and Riverside

Athens - (888) 336-6100 - www.athensservices.com
Serves: Riverside

CR&R Disposal - (951) 943-1991 - www.crrwasteservices.com
Serves: Riverside

The Complete Guide to Residential Recyling is sponsored by:

Printed on recycled paper.

Stormwater Pollution Solutions

Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential

Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

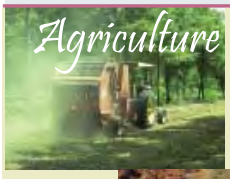
- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Construction

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.

Agriculture



Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

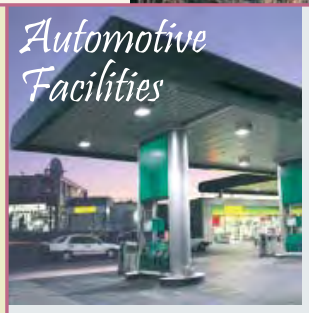
- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.

Forestry

Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

Automotive Facilities



Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

After the Storm

For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps

United States Environmental Protection Agency

EPA 833-B-03-002

January 2003

Internet Address (URL) • HTTP://www.epa.gov
Recycled/Recyclable • Printed With Vegetable Oil Based Inks on 100% Postconsumer, Process Chlorine Free Recycled Paper

A Citizen's Guide to Understanding Stormwater

What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Why is stormwater runoff a problem?

Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.

- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

CONSTRUCTION SITE BEST MANAGEMENT PRACTICES

THE FOLLOWING BMPs MUST BE PROPERLY USED AT ALL CONSTRUCTION SITES IN RIVERSIDE COUNTY TO PROTECT OUR WATERSHEDS FROM POLLUTION

BMPs must be properly installed and maintained on a year round basis.

Construction sites are prohibited from discharging pollutants into storm drains and introducing pollutants to local waterways, rivers, lakes and streams.
To stay in compliance with the law and keep your project on schedule, make sure your BMPs are in place and properly functioning. Your site must be checked and maintained daily.

Erosion Control

Erosion prevention is the most important measure for keeping sediment onsite during construction.

Wherever possible, rely on erosion controls to keep sediment in place. Minimize the disturbed area to protect natural features and soil. Control stormwater flowing onto and through the project. Phase construction activity and stabilize soils promptly. Prevent erosion by implementing soil stabilization practices such as mulching, surface roughening, permanent or temporary seeding. Perform a walk-through of the site to assess stabilization practices.

Concrete Trucks /Pumpers / Finishers

BMPs such as tarps and gravel bags should be implemented to prevent materials and residue from entering into the storm drain system.

Dumpsters

Always cover dumpsters. Areas around dumpsters should be cleaned daily. Perimeter controls around dumpster area should be provided if pollutants are leaking or discharging from the dumpster. The dumpster must be fully contained on the construction site and not in the right-of-way.

Washout Area

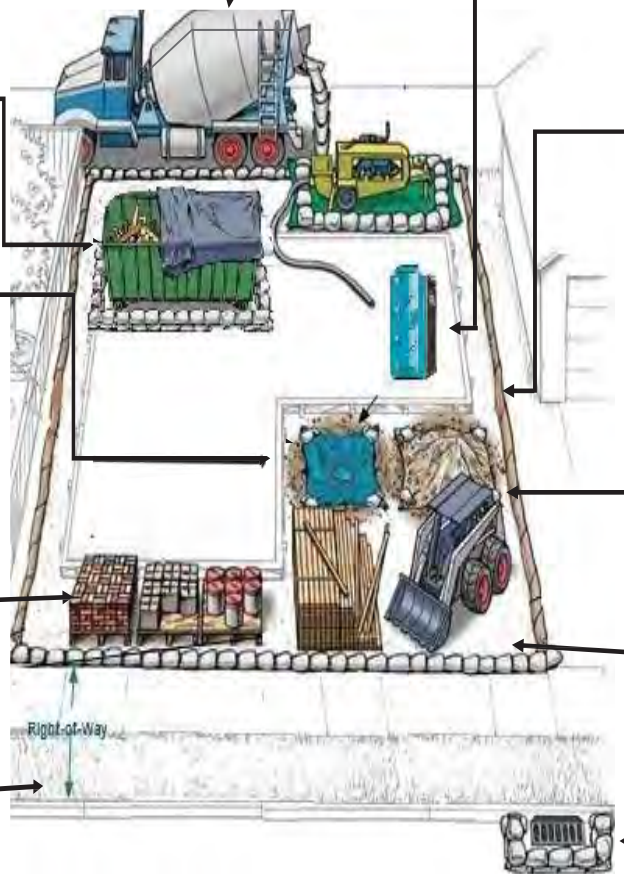
The disposal of "wet" construction materials should be handled in the washout area. This includes paint, stucco, and concrete. Do not wash out paint brushes in the street or dump any residue in the storm drain. Paint brushes and spray guns must be washed out into a hazardous materials drum, or back into the original container and disposed of properly. Washouts should never be in direct contact with the existing ground. Use a berm with an impervious liner to contain wet materials and prevent runoff to nearby areas. The washout area must be checked and maintained daily to ensure compliance. All dried material must be disposed of at a landfill.

Building Materials /Staging Area

Construction material must be stored on site at all times. Building material should always be covered when not in use to prevent dispersal or runoff caused by wind or rain. Flooding must also be prevented by monitoring your site before, during, and after rain events to ensure that BMPs are functioning properly and that there are not any safety issues.

Encroachment Permits

The right-of-way varies from the face of the curb to the private property line. Any construction work within the right-of-way requires an encroachment permit.



Portable Toilets

Portable toilets must be placed on a flat level surface away from any flow line. Portable toilets must have a secondary containment tray. Portable toilets must also be placed behind the curb. Avoid cleaning solutions from coming in contact with the soil.

Perimeter Controls

Perimeter controls are different and separate from erosion controls. Gravel bags, silt fences, and straw wattles are acceptable perimeter controls, and must be used to surround the entire site. Avoid running over perimeter controls with vehicles or heavy equipment to prevent damage to the BMPs. Keep extra absorbent materials and/or wet dry vacuum on site to quickly pick up unintended spills.

Dirt and Grading

Dust control measures shall be implemented during grading operations and throughout all aspects of site development. Mounds of dirt or gravel should be stored on site and sprayed daily with water to prevent excessive dust. The materials should be covered when not in use. For areas that are active and exposed, a wet weather active plan, including additional BMPs, should be in place to protect the site during a rain event. Sites must have a designated entrance/exit with adequate track out controls to prevent the transport of dirt/gravel from the site.

Earthmoving Equipment

Vehicles and earthmoving equipment should be cleaned, fueled and maintained off-site or in a designated contained area. Mud tracks and dirt trails left by equipment leading to and from the site must be cleaned up immediately.

Storm Drains

Storm drains must be protected at all times with perimeter controls, use ¾ inch gravel bags. Sand bags should not be used for inlet protection because they do not permit flow-through. Replace ruptured or damaged gravel bags and remove debris from the right-of-way immediately.

Revised December 2014

IRRIGATION RUNOFF

STORMWATER FACT SHEET

Report Irrigation Runoff or Stormwater Pollution:
800.506.2555

RIVERSIDE COUNTY
WATERSHED PROTECTION

OVERWATERING

Overwatering causes irrigation runoff that may contain pollutants such as pesticides, herbicides, fertilizers, pet waste, yard waste, and sediments which can be hazardous to residents and harmful to our environment. Runoff can also serve as a transport mechanism for other pollutants already on the ground or in the curb gutter. Irrigation runoff entering the storm drain system is an illicit discharge.

BEST PRACTICES

Urban runoff begins when yards and landscaped areas are over-irrigated. Irrigation systems require regular maintenance and visual inspection of the system should be performed to prevent over-spray, leaks, and other problems that result in runoff to storm drains, curbs and gutters.

You can **prevent pollution** by conserving water on your property. Water during cooler times of the day (before 10am and after 6pm).

- Adjust sprinklers to stop overspray and runoff.
- Make needed repairs immediately.
- Use drip irrigation, soaker hoses, or micro-spray systems.
- Use an irrigation timer to pre-set watering times.
- Use a control nozzle or similar mechanism when watering by hand.
- Switch to a water-wise landscape - native plants need less fertilizers, herbicides, pesticides and water.

PROTECT OUR WATERSHED

Many people think that when water flows into a storm drain it is treated, but the storm drain system and the sanitary sewer system are not connected. Everything that enters storm drains flows untreated directly into our creeks, rivers, lakes, beaches and ultimately the ocean. Storm water often contains pollutants, including chemicals, trash, and automobile fluids, all of which pollute our watershed and harm fish and wildlife.

Whether at home or work, you can help reduce pollution and improve water quality by using the above Best Management Practices (BMP's) as part of your daily clean up and maintenance routine.

APPENDIX H
NOISE IMPACT ANALYSIS
OCTOBER 27, 2020

6TH AT PENNSYLVANIA BEYOND FOOD MART NOISE IMPACT ANALYSIS

City of Beaumont

October 26, 2020

ganddini

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

6TH AT PENNSYLVANIA BEYOND FOOD MART NOISE IMPACT ANALYSIS

City of Beaumont

October 26, 2020

prepared by
Roma Stromberg INCE, MS
Catherine Howe, MS

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19268

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EXECUTIVE SUMMARY

The purpose of this report is to provide an assessment of the noise impacts associated with development and operation of the proposed 6th at Pennsylvania Beyond Food Mart project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state and local policies, including those of the City of Beaumont.

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise analysis.

PROJECT LOCATION

The proposed project is located at the southwest corner of 6th Street and Pennsylvania Avenue in the City of Beaumont, California. The site is currently vacant.

PROJECT DESCRIPTION

The approximately 1.4-acre project site is proposed to be developed with a 5,185 square foot convenience market with gas pumps for 16 vehicle fueling positions and a drive through automatic car wash. The proposed site plan shows that a 6-foot concrete wall is proposed along the southern project boundary. The proposed project is consistent with the existing zoning (Commercial General). The proposed project is anticipated to be constructed and fully operational by year 2022.

PROJECT IMPACTS

Construction Impacts

Modeled unmitigated construction noise levels when combined with existing measured noise levels could reach 74.3 dBA L_{eq} at the nearest commercial property line to the north, 70.5 dBA L_{eq} at the nearest residential dwelling unit to the north, 71 dBA L_{eq} at the nearest residential dwelling unit to the northeast, 76.2 dBA L_{eq} at the nearest commercial property line to the east, up to 70.6 dBA L_{eq} at the nearest residential dwelling unit to the east, up to 72.2 dBA L_{eq} at the nearest residential dwelling unit to the southwest, up to 79.6 dBA L_{eq} at the nearest commercial property line to the west, up to 70.1 dBA L_{eq} at the mobile home park to the west, and up to 67.9 dBA L_{eq} at the nearest residential dwelling unit to the northwest of the project site.

Construction noise sources are regulated within Section 9.02.110(F) of the City of Beaumont Municipal Code which prohibits construction activities within one-quarter mile of an occupied residence or residences other than between the hours of 6:00 AM and 6:00 PM during the months of June through September and between the hours of 7:00 AM and 6:00 PM during the months of October through May. Furthermore, Section 9.02.110(F) prohibits sound levels at any time to exceed fifty-five dB(A) for intervals of more than fifteen minutes per hour as measured in the interior of the nearest occupied residence or school.

The interior noise level is the difference between the projected exterior noise level at the structure's facade and the noise reduction provided by the structure itself. Typical buildings generally provide a conservative 20 dBA noise level reduction with "windows closed". The projected interior noise level can be estimated by subtracting the building shell design from the predicted exterior noise level. A "windows closed" condition requires mechanical fresh air ventilation (e.g. air conditioning) be provided in habitable dwelling units. Therefore, project construction noise would be significant if it occurs outside of the hours of 6:00 AM and 6:00 PM during the months of June through September or between the hours of 7:00 AM and 6:00 PM during the months of October through May; or if it results in an exterior noise level at an occupied residence or school that exceeds 75 dBA for any 15-minute period.

Impacts related to construction noise will be further minimized with adherence to applicable Municipal Ordinances and implementation of the measures presented in Section 7 of this report. Impacts would be less than significant**.**

Noise Impacts to Off-Site Receptors Due to Project Generated Trips

Existing and Existing Plus project noise levels along acoustically significant area roadways were modeled utilizing the FHWA Traffic Noise Prediction Model FHWA-RD-77-108 in order to quantify the proposed project's contribution to increases in ambient noise levels.

For off-site project generated noise, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they result in an increase of at least 5 dBA CNEL and: (1) the existing noise levels already exceed the applicable land use compatibility standard for the affected sensitive receptors set forth in the Safety Element of the City's General Plan; or (2) the project increases noise levels by at least 5 dBA CNEL and raises the ambient noise level from below the applicable standard to above the applicable standard.

Per the noise modeling, all of the modeled roadway segments are anticipated to change the noise a nominal amount (approximately 0.03 to 0.23 dBA CNEL). Therefore, a change in noise level would not be audible and would be considered less than significant. No mitigation is required.

Noise Impacts to Off-Site Receptors Due to On-Site Operational Noise

The SoundPLAN noise model was utilized to estimate project peak hour operational noise at noise measurement locations and at adjacent properties in order to determine if it is likely to exceed the City's noise thresholds at nearby receptors. Operational noise levels will not exceed City exterior or interior noise standards at nearby land uses. Impacts would be less than significant. No mitigation is required.

Noise Impacts to the Proposed Project (Noise/Land Use Compatibility)

In order to evaluate the proposed project in light of the Noise and Land Use Compatibility Standards provided in the City of Beaumont General Plan Noise Element, 2040 traffic noise levels associated with Pennsylvania Avenue and 6th Street was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Future noise levels associated with 6th Avenue and Pennsylvania Avenue vehicle traffic is expected to reach 74.5 dBA CNEL at the northeast corner of the proposed convenience store. This noise level falls below the maximum acceptable noise level for commercial land uses as presented in Table 5. This impact is less than significant. No mitigation is required.

Groundborne Vibration Impacts

Construction equipment is anticipated to be located at a distance of at least 55 feet or more from any receptor. Temporary vibration levels associated with project construction would be less than significant. Therefore, impacts associated with construction activities would be less than significant. No mitigation is required.

CONSTRUCTION NOISE REDUCTION MEASURES

In addition to adherence to the County of Beaumont Municipal Code which limits the construction hours of operation, the following measures are recommended to reduce construction noise and vibrations, emanating from the proposed project:

1. During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. Equipment shall be shut off and not left to idle when not in use.

4. The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

5. Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

6. The project proponent shall mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.

7. The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

1. INTRODUCTION

This section describes the purpose of this noise impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

The purpose of this report is to provide an assessment of the noise impacts resulting from development of the proposed 6th at Pennsylvania Beyond Food Mart project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state and local policies, including those of the City of Beaumont.

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise analysis.

PROJECT LOCATION

The proposed project is located at the southwest corner of 6th Street and Pennsylvania Avenue in the City of Beaumont, California. The site is currently vacant. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The approximately 1.4-acre project site is proposed to be developed with a 5,185 square foot convenience market with gas pumps for 16 vehicle fueling positions and a drive through automatic car wash. The proposed project is consistent with the existing zoning (Commercial General). The proposed project is anticipated to be constructed and fully operational by year 2022. Figure 2 illustrates the project site plan.

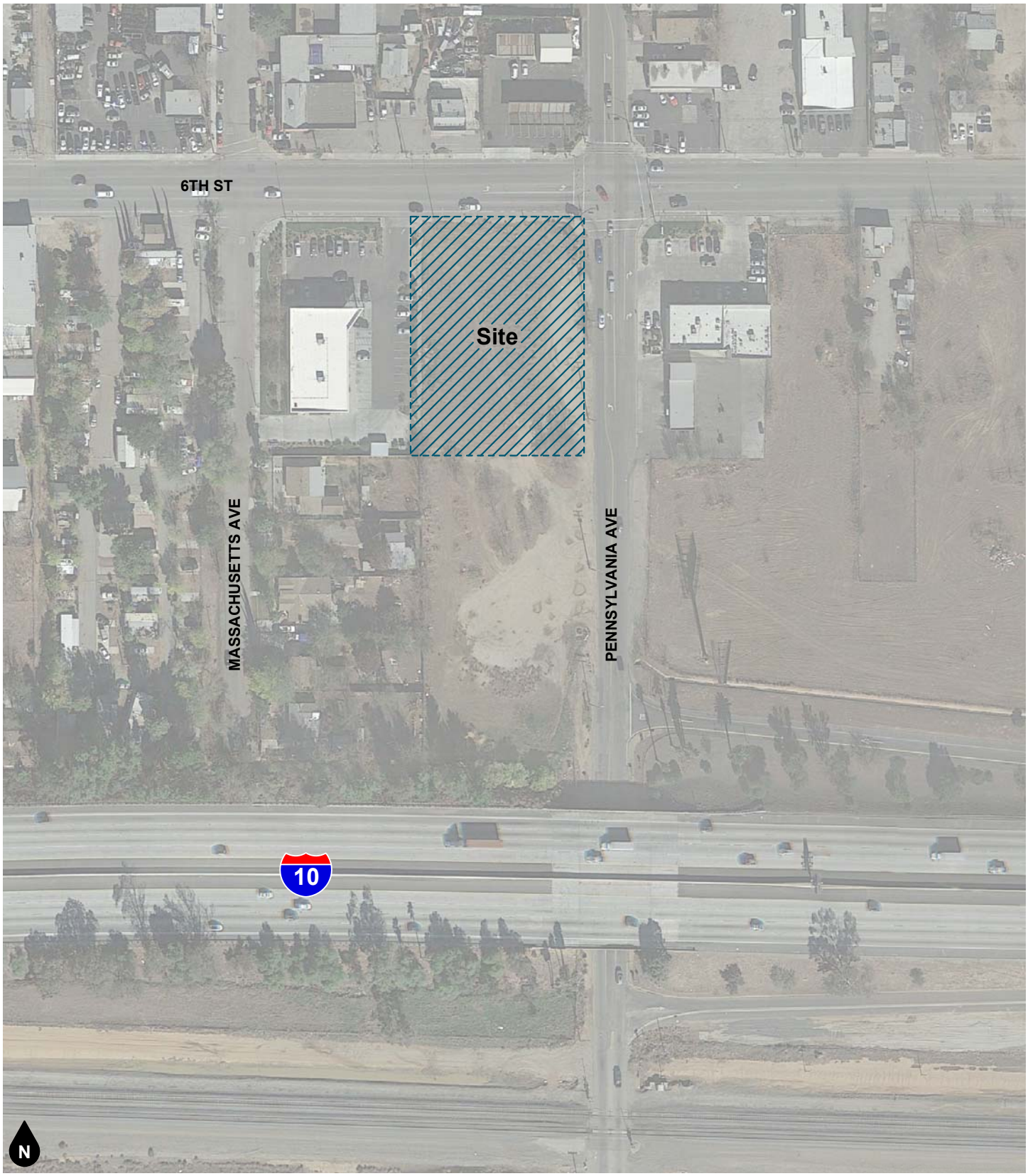

Figure 1
Project Location Map

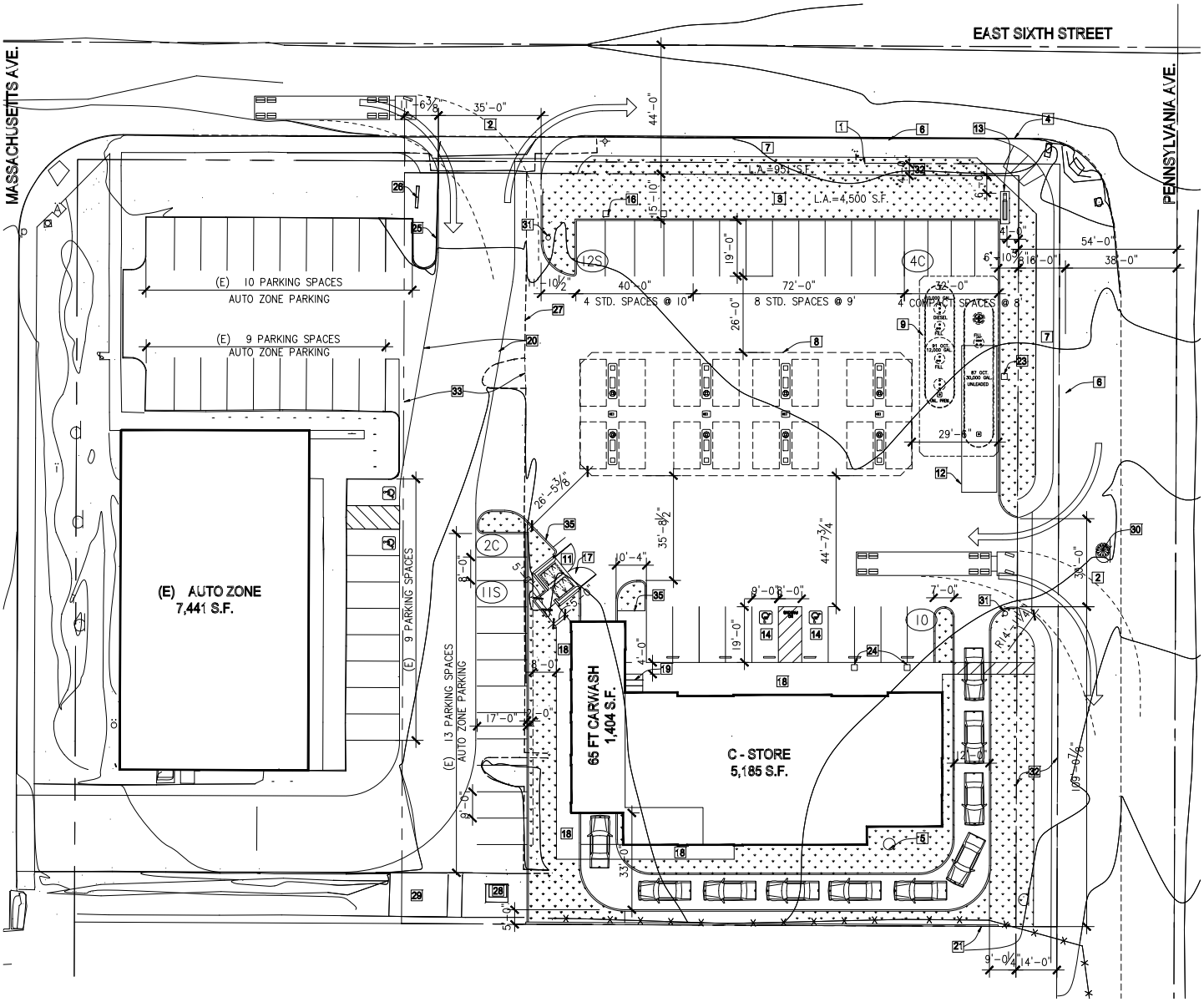

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Figure 2
Site Plan

2. NOISE AND VIBRATION FUNDAMENTALS

NOISE FUNDAMENTALS

Sound is a pressure wave created by a moving or vibrating source that travels through an elastic medium such as air. Noise is defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in extreme circumstances, hearing impairment.

Commonly used noise terms are presented in Appendix B. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA.

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiates uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as a doubled traffic volume, would increase the noise levels by 3 dBA; halving of the energy would result in a 3 dBA decrease. Figure 3 shows the relationship of various noise levels to commonly experienced noise events.

Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq}, or the equivalent noise level for that period of time. For example, $L_{eq(3)}$ would represent a 3-hour average. When no period is specified, a one-hour average is assumed.

Noise standards for land use compatibility are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (DNL). CNEL is a 24-hour weighted average measure of community noise. CNEL is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours. DNL is a very similar 24-hour average measure that weights only the nighttime hours.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA; that a change of 5 dBA is readily perceptible, and that an increase (decrease) of 10 dBA sounds twice (half) as loud. This definition is recommended by the California Department of Transportation's Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013).

VIBRATION FUNDAMENTALS

The way in which vibration is transmitted through the earth is called propagation. Propagation of earthborn vibrations is complicated and difficult to predict because of the endless variations in the soil through which waves travel. There are three main types of vibration propagation: surface, compression and shear waves. Surface waves, or Raleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water.

Compression waves, or P-waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. Shear waves, or S-waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation".

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal in inches per second. The RMS of a signal is the average of the squared amplitude of the signal in vibration decibels (VdB), ref one micro-inch per second. The Federal Railroad Administration uses the abbreviation "VdB" for vibration decibels to reduce the potential for confusion with sound decibel.

PPV is appropriate for evaluating the potential of building damage and VdB is commonly used to evaluate human response. Decibel notation acts to compress the range of numbers required in measuring vibration. Similar to the noise descriptors, L_{eq} and L_{max} can be used to describe the average vibration and the maximum vibration level observed during a single vibration measurement interval. Figure 4 illustrates common vibration sources and the human and structural responses to ground-borne vibration. As shown in the figure, the threshold of perception for human response is approximately 65 VdB; however, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. Vibration tolerance limits for sensitive instruments such as magnetic resonance imaging (MRI) or electron microscopes could be much lower than the human vibration perception threshold.

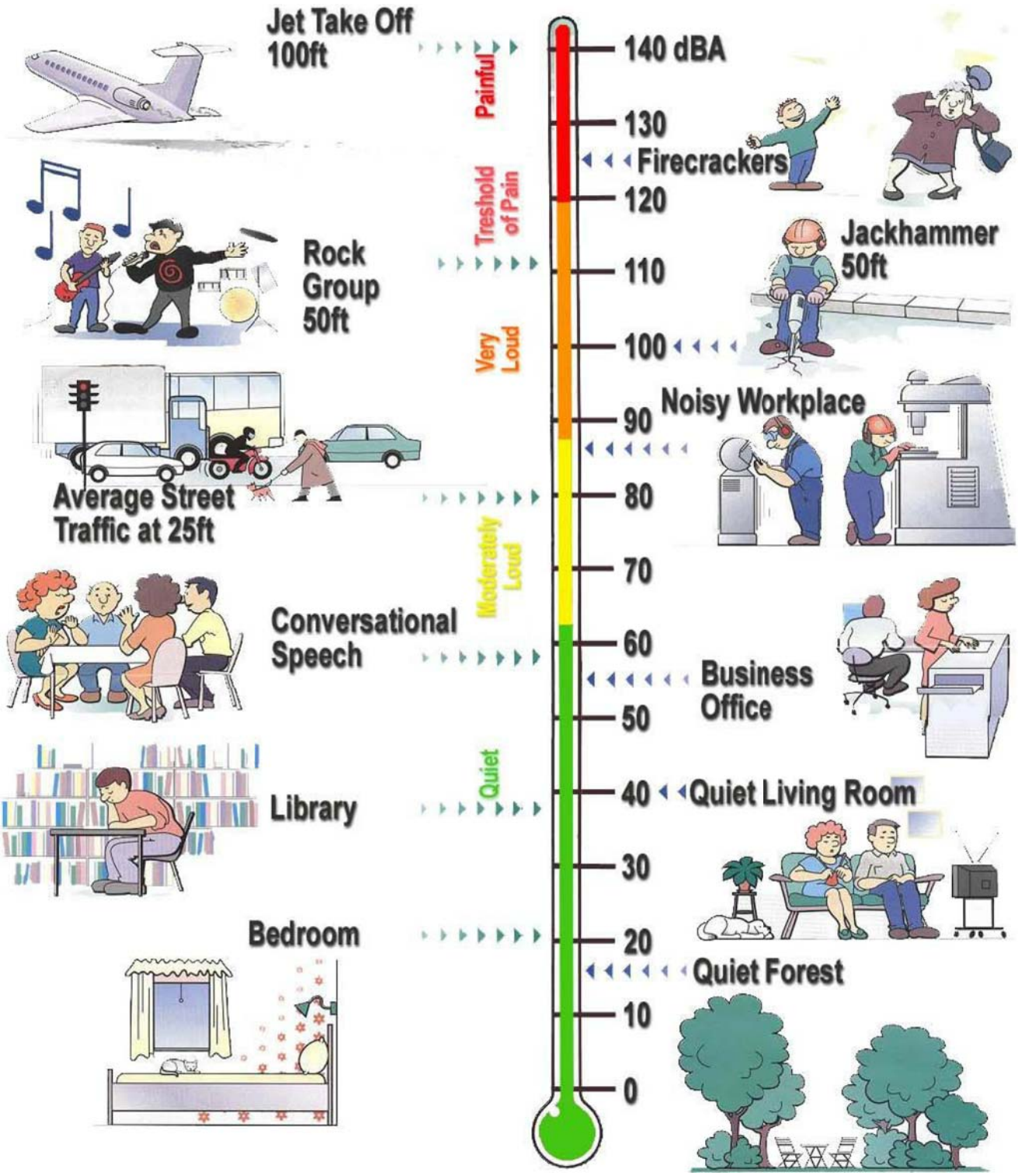
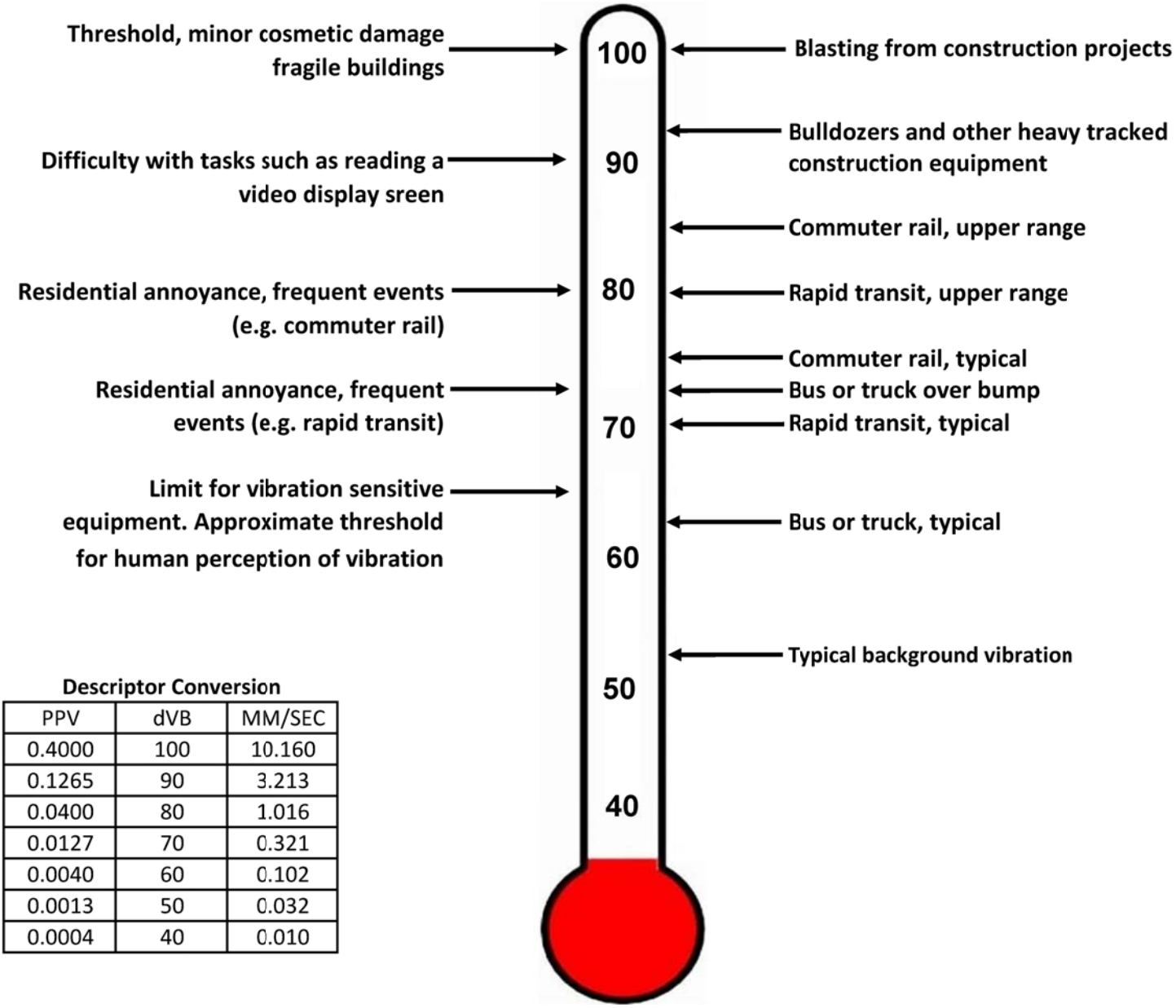


Figure 3
Weighted Sound Levels and Human Response

Source: Bruel & Kjaer 2001



Descriptor Conversion

PPV	dVB	MM/SEC
0.4000	100	10.160
0.1265	90	3.213
0.0400	80	1.016
0.0127	70	0.321
0.0040	60	0.102
0.0013	50	0.032
0.0004	40	0.010

Source: FRA, 2012. Federal Railroad Administration High-Speed Ground Transportation Noise and Vibration Impact Assessment. Office of Railroad Policy Development, Washington, D.C. DOT/FRA/ORD-12/15. September.

Figure 4
Typical Levels of Groundborne Vibration

3. EXISTING NOISE ENVIRONMENT

EXISTING LAND USES AND SENSITIVE RECEPTORS

The project site is bordered 6th Street to the north, Pennsylvania Avenue to the east, vacant land to the south, residential to the southwest, and commercial to the west.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas. Sensitive land uses that may be affected by project noise include the existing single-family detached residential dwelling units located adjacent to the southwest corner of the project site, approximately 130 feet north (across 6th Street), approximately 185 feet northeast of the project site (along eastern side of Pennsylvania Avenue), and approximately 300 feet east of the project site (along the southern side of 6th Street of the project site. A mobile home park is located approximately 220 feet west of the project site (along the western side of Massachusetts Avenue).

AMBIENT NOISE MEASUREMENTS

An American National Standards Institute (ANSI Section SI4 1979, Type 1) Larson Davis model LxT sound level meter was used to document existing ambient noise levels. In order to document existing ambient noise levels in the project area, five (5) 15-minute daytime noise measurements were taken between 1:40 PM and 3:27 PM on June 30, 2020. In addition, one (1) long-term 24-hour noise measurement was also taken from June 30, 2020 to July 1, 2020. Field worksheets and noise measurement output data are included in Appendix C.

As shown on Figure 5, the noise measurements were taken near the single-family residential uses to the southwest of the project site (along Massachusetts Avenue) (STNM1), near the single-family detached residential dwelling units and commercial uses to the northwest of the project site (along Massachusetts Avenue) (STNM2), near the single-family residential dwelling units and commercial uses located to the northeast of the project site (along Pennsylvania Avenue) (STNM3), near the single-family residential dwelling units located to the east of the project site (southern side of 6th Street) (STNM4), and to the southwest of the project site (in the vacant lot adjacent to the south) (LTNM1). Table 1 provides a summary of the short-term ambient noise data. Table 2 provides hourly interval ambient noise data from the long-term noise measurement. Short-term ambient noise levels were measured between 57.8 and 67.9 dBA L_{eq}. Long-term hourly noise measurement ambient noise levels ranged from 60.7 to 66 dBA L_{eq}. The dominant noise sources were from vehicles traveling along 6th Street, Pennsylvania Avenue, and the Interstate 10 Freeway, and other surrounding roadways as well as and auto body shop equipment noise.

Table 1
Short-Term Noise Measurement Summary (dBA)

Daytime Measurements[1,2]								
Site Location	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
STNM1	1:40 PM	60.9	68.2	55.4	64.1	62.8	61.7	60.8
STNM2	2:10 PM	57.8	73.9	49.5	65.5	61.8	57.4	54.8
STNM3	2:39 PM	67.8	84.5	55.0	76.3	71.4	66.8	62.4
STNM4	3:12 PM	67.9	81.0	54.6	74.7	72.2	68.7	64.8

Notes:
(1) See Figure 5 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.
(2) Noise measurements performed on June 30, 2020.

Table 2
Long-Term Noise Measurement Summary (dBA)

24-Hour Ambient Noise[1,2]								
Hourly Measurements	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
Overall Summary	6:00 PM	64.0	86.6	48.0	68.0	66.6	65.0	58.7
1	6:00 PM	64.1	75.3	55.1	67.6	66.4	65.0	63.7
2	7:00 PM	60.7	77.6	57.4	68.2	67.0	65.5	63.9
3	8:00 PM	60.9	83.6	55.5	68.0	66.8	65.1	63.5
4	9:00 PM	61.2	81.0	54.7	67.6	66.1	64.4	62.6
5	10:00 PM	61.8	69.6	52.0	67.2	65.8	63.7	61.6
6	11:00 PM	62.3	82.1	51.5	66.9	64.9	62.8	60.7
7	12:00 AM	62.5	73.8	50.5	66.8	65.1	62.9	60.6
8	1:00 AM	63.1	82.8	49.3	66.0	64.0	61.6	59.1
9	2:00 AM	63.4	79.7	48.2	66.0	64.0	61.5	59.0
10	3:00 AM	63.6	70.8	48.0	66.0	64.4	62.1	59.6
11	4:00 AM	64.4	86.2	49.4	67.2	65.5	63.6	61.5
12	5:00 AM	64.4	74.7	53.1	67.7	66.2	64.4	62.6
13	6:00 AM	64.5	82.0	55.1	68.4	66.8	65.4	63.9
14	7:00 AM	64.5	70.3	57.8	67.7	66.7	65.3	64.0
15	8:00 AM	64.6	81.4	55.7	68.4	66.8	65.3	63.9
16	9:00 AM	64.6	78.4	55.6	68.4	67.1	65.6	64.3
17	10:00 AM	64.7	75.0	57.7	68.5	67.0	65.6	64.2
18	11:00 AM	64.8	82.6	58.0	68.2	67.0	65.6	64.3
19	12:00 PM	64.8	76.7	57.7	68.0	66.7	65.3	64.0
20	1:00 PM	64.8	78.3	58.6	68.5	66.7	65.5	64.3
21	2:00 PM	64.9	76.3	57.9	68.0	66.9	65.7	64.6
22	3:00 PM	64.9	86.6	59.7	69.0	67.6	66.4	65.3
23	4:00 PM	65.3	80.4	58.3	69.0	67.5	65.9	64.5
24	5:00 PM	66.0	83.4	57.8	68.8	66.4	64.9	63.6

Notes:

(1) See Figure 5 for noise measurement locations. Noise measurement was performed over a 24-hour duration.

(2) Noise measurement performed from June 30, 2020 to July 1, 2020.

Legend

⊕ NM 1	Noise Measurement Location
ST NM	Short-Term Noise Measurement
LT NM	Long-Term Noise Measurement
60.9	Measured Noise Levels

Figure 5
Noise Measurement Location Map

4. REGULATORY SETTING

FEDERAL REGULATION

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the Ldn should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In addition, the Levels of Environmental Noise identified five (5) dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA Ldn (i.e., there would not be a noticeable increase in adverse community reaction with an increase of five dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies, allowing more individualized control for specific issues by designated Federal, State, and local government agencies.

STATE REGULATIONS

State of California General Plan Guidelines 2017

Though not adopted by law, the State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., Ldn or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate any special acoustical treatment or noise mitigation. The "conditionally acceptable" or "normally unacceptable" ranges include conditions calling for detailed acoustical study prior to the construction or operation of the proposed project. The City of Beaumont has adopted their own version of these standards.

California Environmental Quality Act

The California Environmental Quality Act Guidelines (Appendix G) establishes thresholds for noise impact analysis. This noise study includes analysis of noise and vibration impacts necessary to assess the project in light of the following Appendix G Checklist Thresholds.

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Substantial increases in ambient noise levels are usually associated with project construction noise (temporary) and project operational noise (permanent).

Project Construction Noise: Construction noise sources are regulated within the City of Beaumont under Section 9.02.110(F) of the City's Municipal Code which prohibits construction activities within one-quarter mile of an occupied residence or residences other than between the hours of 6:00 AM and 6:00 PM during the months of June through September and between the hours of 7:00 AM and 6:00 PM during the months of October through May. Furthermore, Section 9.02.110(F) prohibits sound levels at any time to exceed fifty-five dB(A) for intervals of more than fifteen minutes per hour as measured in the interior of the nearest occupied residence or school. The interior noise level is the difference between the projected exterior noise level at the structure's facade and the noise reduction provided by the structure itself. Typical buildings generally provide a conservative 20 dBA noise level reduction with "windows closed". The projected interior noise level can be estimated by subtracting the building shell design from the predicted exterior noise level. A "windows closed" condition requires mechanical fresh air ventilation (e.g. air conditioning) be provided in habitable dwelling units.

Therefore, project construction noise would be significant if it occurs outside of the hours of 6:00 AM and 6:00 PM during the months of June through September or between the hours of 7:00 AM and 6:00 PM during the months of October through May; or if it results in an exterior noise level at an occupied residence or school that exceeds 75 dBA for any 15-minute period.

Project Operational Noise (permanent): The proposed project has the potential to generate on-site and off-site noise. Noise contours were created for the purposes of defining a "significant" increase in traffic noise.

For on-site generated noise, the City of Beaumont General Plan identifies noise levels of up to 55 CNEL as the desirable noise levels for single-family detached residential land uses and noise levels up to 65 CNEL as the maximum acceptable noise level. Noise levels of up to 60 CNEL are identified as the desirable maximum for multi-family attached residential land uses and 65 CNEL as the maximum acceptable. Further, per Section 9.02.080 of the City's Municipal Code, residential interior noise levels are not to exceed 45 dBA between the hours of 7:00 AM and 10:00 PM or 35 dBA between the hours of 10:00 PM and 7:00 AM.

For off-site project generated noise, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they result in an increase of at least 5 dBA CNEL and: (1) the existing noise levels already exceed the applicable land use compatibility standard for the affected sensitive receptors set forth in the Safety Element of the City's General Plan; or (2) the project increases noise levels by at least 5 dBA CNEL and raises the ambient noise level from below the applicable standard to above the applicable standard.

b) Generate excessive groundborne vibration or groundborne noise levels?

As shown in Table 3, a peak particle velocity (PPV) of 0.20 is the threshold at which there is a risk to "architectural" damage to normal dwellings. It is also the level at which groundborne vibration can become

annoying. Impacts would be significant if construction activities result in groundborne vibration of 0.20 PPV or higher at a sensitive receptor.

Table 3. Typical Human Reaction and Effect on Buildings Due to Groundborne Vibration

Vibration Level Peak Particle Velocity (PPV)	Human Reaction	Effect on Buildings
0.006–0.019 in/sec	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08 in/sec	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10 in/sec	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e., not structural) damage to normal buildings
0.20 in/sec	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6 in/sec	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Notes:
Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 6 Tables 5 and 12, September 2013.

California Department of Transportation (Caltrans)

The California Department of Transportation has published one of the seminal works for the analysis of ground-borne noise and vibration relating to transportation- and construction-induced vibrations and although the project is not subject to these regulations, it serves as useful tools to evaluate vibration impacts. These guidelines recommend that a standard of 0.2 inches per section (in/sec) PPV not be exceeded for the protection of normal residential buildings (California Department of Transportation, 2013). This is the appropriate threshold for construction related ground-borne vibration impacts.

LOCAL REGULATIONS

City of Beaumont General Plan

Table 4 shows the City's noise level standards related to land use compatibility. According to this matrix, noise levels of up to 65 CNEL are considered maximum desirable noise level for mixed-use and commercial land uses, while exterior noise levels of up 75 CNEL are considered to be the maximum acceptable. These standards apply to the proposed project itself.

The City of Beaumont General Plan also includes the following goal and policies in regards to noise which apply to the proposed project.

Goal 6 The City of Beaumont will strive to control the adverse effects of noise in the environment.

Policy 24: The City of Beaumont will protect public health and welfare by eliminating existing noise problems and by preventing significant degradation of the future acoustic environment.

Policy 25: The City of Beaumont will incorporate noise considerations into land use planning decisions.

Policy 26: The City of Beaumont shall require the inclusion of noise mitigation measures, as may be necessary to meet standards, in the design of new roadway projects in Beaumont.

Policy 27: The City of Beaumont shall promote the effective enforcement of City, State and Federal noise standards by all appropriate City divisions.

City of Beaumont Municipal Code

Chapter 9.02 of the City's Municipal Code establishes base ambient noise levels and establishes maximum noise level limits for stationary noise sources.

Section 9.02.050 Base Ambient Noise Level.

All ambient noise measurements shall commence at the base ambient noise levels in decibels within the respective times and zones as presented in Table 5.

Table 4. Noise and Land Use Compatibility Standards (Ambient Exterior Noise Exposure)

and Use	Desirable Maximum (CNEL)	Maximum Acceptable (CNEL)
Single-Family Residential	55 dBA	65 dBA
Multiple-Family Residential	60 dBA	65 dBA
6th Street Corridor Overlay	65 dBA	70 dBA
6th Street Corridor Overlay	65 dBA	70 dBA
Public Facilities (Inc. Schools)	60 dBA	70 dBA
All Commercial & Mixed-Use	65 dBA	75 dBA
Industrial	70 dBA	75 dBA

Notes:
Source: City of Beaumont General Plan Safety Element, March 2007.

Table 5. Base Ambient Noise Levels (Exterior)

City of Beaumont Base Ambient Noise Level (BANL)			
Decibels	Decibels (Adjusted)	Time Period	Zone Use
45 dB(A)	57.8	10:00 PM - 7:00 AM	Residential
55 dB(A)	57.8	7:00 AM - 10:00 PM	Residential
50 dB(A)	n/a	10:00 PM - 7:00 AM	Industrial and Commercial
75 dB(A)	n/a	7:00 AM - 10:00 PM	Industrial and Commercial

Note: Actual decibel measurements exceeding the levels set forth hereinabove at the times and within the zones corresponding thereto shall be employed as the "base ambient noise level" referred to in this Chapter. Otherwise, no ambient noise shall be deemed to be less than the above specified levels.

Section 9.02.070 Maximum Residential Noise Levels.

Intermittent or occasional noise such as those associated with stationary noise sources is not of sufficient volume to exceed community noise standards that are based on a time-averaged scale such as the CNEL scale. To account for intermittent noise, another method to characterize noise is the percent noise level (L% or Ln). The percent noise level is the level exceeded X% of the time during the measurement period. Section 9.02.070 has established the following noise sources for intermittent or occasional noise that is usually associated with

stationary noise sources. Noise levels shall not exceed the criteria shown in Table 6 for the duration periods specified:

Table 6. Maximum Residential Noise Levels (Exterior)

Maximum Residential Noise Levels	
Noise Level Exceeded	Maximum Duration Period
5 dB(A) above BANL[1]	15 minutes in any hour
10 dB(A) above BANL	5 minutes in any hour
15 dB(A) above BANL	1 minute in any hour
20 dB(A) above BANL	Not permitted

[1] Base Ambient Noise Level

Section 9.02.080 Maximum Interior Noise Levels.

No person shall operate or cause to be operated, any source of sound which causes the noise level, when measured inside another dwelling unit, school or hospital, to exceed the noise levels presented in Table 7.

Table 7. Maximum Interior Noise Levels

City of Beaumont Maximum Interior Noise Levels		
Decibels	Time Period	Land Use
35 dB(A)	10:00 PM - 7:00 AM	Residential
45 dB(A)	7:00 AM - 10:00 PM	Residential
45 dB(A)	7:00 AM - 10:00 PM (while school is in session)	School
45 dB(A)	Anytime	Hospital

No person shall operate or cause to be operated, any source of sound which causes the noise level, when measured inside another dwelling unit, school or hospital, to exceed the noise levels presented in Table 8.

Table 8. Base Ambient Noise Levels (Interior)

City of Beaumont Maximum Interior Noise Levels	
Noise Level Exceeded	Maximum Duration Period
5 dB(A) above interior BANL	5 minutes in any hour
10 dB(A) above interior BANL	1 minutes in any hour
Over 10 dB(A) above interior BANL	Not permitted

If the measured interior noise level exceeds the permissible within the first two noise limit categories in this section, the allowable noise exposure standard shall be increased in five-decibel increments in each category as appropriate to reflect the interior ambient noise level. In the event the interior ambient noise level exceeds the third noise limit category, the maximum allowable interior noise level under said category shall be increased to reflect the maximum interior ambient noise level.

Section 9.02.090 Maximum Non-residential Noise Levels.

Any provision contained herein to the contrary notwithstanding, no exterior noise level shall exceed the base ambient noise levels (BANL) for nonresidential land uses set forth in any development agreement applicable to such development or as otherwise specifically set forth in any development standard which is by its terms enforceable by the City against the noise maker. In this case, the proposed project shall not generate noise levels that exceed 75 dBA L_{eq} between the hours of 7:00 AM and 10:00 PM or exceed 50 dBA L_{eq} between the hours of 10:00 PM and 7:00 AM.

Section 9.02.110 Special Provisions.

F. Construction, landscape, maintenance or repair.

1. It shall be unlawful for any person to engage in or permit the generation of noise related to landscape maintenance, construction including erection, excavation, demolition, at the property line of the nearest adjacent occupied property, as to be in excess of the sound levels permitted under this Chapter, at other times than between the hours of 7:00 AM and 6:00 PM. The person engaged in such activity is hereby permitted to exceed sound levels otherwise set forth in this Chapter for the duration of the activity during the above described hours for purposes of construction. However, nothing contained herein shall permit any person to cause sound levels to at any time exceed fifty-five dB(A) for intervals of more than fifteen minutes per hour as measured in the interior of the nearest occupied residence or school.

2. Whenever a construction site is within one-quarter mile of an occupied residence or residences, no construction activities shall be undertaken between the hours of 6:00 PM and 6:00 AM during the months of June through September and between the hours of 6:00 PM and 7:00 AM during the months of October through May. Exceptions to these standards shall be allowed only within the written consent of the building official.

3. Construction related noise as defined in subsection F (1 and 2) above may take place outside the time period set forth therein and above the relative sound levels in case of urgent necessity in the interest of the public health and safety, and then only with the prior permission of the building inspector. Such permit may be granted for a period not to exceed three days or until the emergency ends, whichever is less. The permit may be renewed for periods of three days while the emergency continues.

4. Unless exempted in this Chapter, if the building official should determine that the public health and safety will not be impaired by the construction related noise, the building inspector may issue a permit for construction within the hours of 6:00 PM and 7:00 AM, upon application being made at the time the permit for the work is awarded or during the progress of the work. The building official may place such conditions on the issuance of the permit that are appropriate to maintain the public health and safety, as determined by the building official.

G. Machinery, equipment, fans, and air conditioning. It shall be unlawful for any person to operate, cause to operate or permit the operation of any machinery, equipment, device, pump, fan, compressor, air conditioning apparatus or similar mechanical device, including but not limited to the use of any steam shovel, pneumatic hammer, derrick, steam or electric hoist, blower or power fan, or any internal combustion engine, the operation of which causes noise due to the explosion of operating gases or fluids, or other appliance, in any manner so as to create any noise which would cause the noise level at the property line of the property upon which the equipment or machinery is operated to exceed the base ambient noise level by five dB(A).

5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

This section discusses the analysis methodologies used to assess noise impacts.

CONSTRUCTION NOISE MODELING

Construction noise associated with the proposed project was calculated at the sensitive receptor locations, utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the project site. The equipment used to calculate the construction noise levels for each phase were based on the assumptions provided in the CalEEMod modeling of a similar project.[1] For construction noise purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the property line of residential properties with existing residential buildings. Construction noise worksheets are provided in Appendix D.

FEDERAL HIGHWAY ADMINISTRATION (FHWA) TRAFFIC NOISE PREDICTION MODEL

Existing and Existing Plus project traffic noise levels were modeled for roadways affected by project generated traffic utilizing the FHWA Traffic Noise Prediction Model FHWA-RD-77-108 in order to quantify the proposed project's contribution to increases in ambient noise levels. The FHWA Traffic Noise Prediction Model was also utilized to estimate future traffic noise levels at the project site. Peak hour traffic volumes for 2040 conditions (Fehr & Peers 2020) were converted to average daily trips (ADTs) and future traffic noise levels were calculated using this data. 6th Avenue is designated as an Arterial Highway and Pennsylvania Avenue is designated as a Major Highway.

The FHWA Traffic Noise Prediction Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the REMEL to account for: total average daily traffic volumes, roadway classification, width, speed and truck mix, roadway grade and site conditions (hard or soft ground surface). Surfaces adjacent to all modeled roadways were assumed to have a "hard site" to predict worst-case, conservative noise levels. A hard site, such as pavement, is highly reflective and does not attenuate noise as quickly as grass or other soft sites. Possible reductions in noise levels due to intervening topography and buildings were not accounted for in this analysis.

Existing and Existing Plus Project vehicle mix were obtained from the project's traffic study (Ganddini Group 2020). Existing Plus Project vehicle mixes were calculated by adding the proposed project trips to existing conditions. FHWA spreadsheets are included in Appendix E.

SOUNDPLAN NOISE MODEL

The SoundPLAN acoustical modeling software was utilized to model project operational worst-case stationary noise impacts from the proposed project to adjacent sensitive uses (e.g., residences). SoundPLAN is capable of evaluating stationary noise sources (e.g., parking lots, drive-thru menus, carwash equipment, vacuums, etc.) and much more. The SoundPLAN software utilizes algorithms (based on the inverse square law) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations. In addition to the information provided below, noise modeling input and outputs assumptions are provided in Appendix F.

[1] Del Rosa at Baseline Gas Station and Convenience Store Air Quality, Global Climate Change, and Energy Impact Analysis, Ganddini Group, Inc., April 30, 2020.

Peak hour operational noise levels were modeled utilizing representative sound levels in the SoundPLAN model. Modeled noise sources include car wash equipment, vacuum equipment, queuing, fueling area and parking lot noise, and HVAC equipment. This is a conservative modeling effort, given that in actuality, several of the noise sources are not in operation continuously for an entire hour. A nighttime version of project operation was also modeled. This version of the model run assumed that no car wash or vacuuming activity would occur between the hours of 10:00 PM and 7:00 AM.

Car Wash Equipment Noise

The car wash drying system is by far the loudest noise source associated with the car wash tunnel. A representative sound level of 93.1 dBA L_{eq} at the tunnel exit was utilized to model the propagation of car wash noise in the SoundPLAN noise model. A point noise source was placed 5 feet from the opening of the end of the car wash tunnel at a height of 8 feet to represent dryer noise. Car wash noise was assumed to occur during daytime hours only (7:00 AM to 10:00 PM)

Vacuum Equipment Noise

A point noise source with a sound power level of 85.9 was assigned to each vacuum station to represent noise associated with general vacuuming/blowing activities. This noise level was provided by the manufacturer and is included in Appendix F. Vacuum Equipment noise was assumed to occur during daytime hours only (7:00 AM to 10:00 PM)

Parking Lot Noise and Fueling Area

Parking lot noise was calculated using SoundPLAN methodology. Specifically, the traffic volume of the parking lot is entered with the number of moves per parking, the hour and the number of parking bays. The user defines whether the parking lots are for automobiles, motorcycles, or trucks, and the emission level of a parking lot is automatically adjusted accordingly. The values for the number of parking moves for each time slice is the number of parking moves per reference unit (most often per parking bay), averaged for the hour[2].

SoundPLAN utilizes parking lot noise emission levels from the 6th revised edition of the parking lot study "Recommendations for the Calculation of Sound Emissions of Parking Areas, Motorcar Centers and Bus Stations as well as of Multi-Story Car Parks and Underground Car Parks" published by the Bavarian Landesamt für Umwelt provides calculation methods to determine the emissions of parking lots.

The parking lot emission table documents the reference level (Lw,ref) from the parking lot study.

Lw, ref = Lw0 + KPA + KI + KD + KStrO + 10 log(B) [dB(A)]

With the following parameters:

Lw0 = Basic sound power, sound power level of one motion / per hour on P+R areas = 63 dB(A)
KPA = Surcharge parking lot type
KI = Surcharge for impulse character
KD = Surcharge for the traffic passaging and searching for parking bays in the driving lanes 2,5 * lg (f * B - 9)
f = Parking bays per unit of the reference value
B = Reference value
KStrO = Surcharge for the road surface
B = Reference value

[2] SoundPLAN Essential 4.0 Manual. SoundPLAN International, LLC. May 2016.

The fueling area was modeled as an area noise source with a sound power level of 65 dBA L_{eq} per square meter to represent normal to loud speech.

Mechanical Equipment (HVAC Units) Noise

A noise reference level of 67.7 dBA at 3 feet (sound power level of 78.7 dB) was utilized to represent rooftop 5 Ton Carrier HVAC units[3]. A rooftop HVAC plan is not available at the time of this analysis so the exact location and number of units per building were estimated. A total of 16 rooftop units were modeled on the proposed rooftops.

[3] MD Acoustics, LLC Noise Measurement Data for RTU –Carrier 50TFQ0006 and car alarm.

6. IMPACT ANALYSIS

This impact discussion analyzes the potential for noise and/or groundborne vibration impacts to cause the exposure of a person to, or generation of, noise levels in excess of established City of Beaumont standards related to: construction, operation, and transportation noise related impacts to, or from, the proposed project.

IMPACTS RELATED TO CONSTRUCTION NOISE

The existing residential uses located to the north, northeast, east, southwest, west, and northwest of the project site may be affected by short-term noise impacts associated with construction noise. Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work.

The construction phases for the proposed project are anticipated to include grading, building construction, paving and architectural coating. A summary of noise level data for a variety of construction equipment compiled by the U.S. Department of Transportation is presented in Table 9. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings.

Construction noise associated with the proposed project was calculated utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the proposed construction activity. Construction noise levels were calculated for each phase. Anticipated noise levels during each construction phase are presented in Table 10. Worksheets for each phase are included as Appendix D.

A comparison of existing noise levels and existing plus project construction noise levels is also presented in Table 10. STNM3 was chosen to represent noise levels at the dwelling units of the single-family residential uses to the north and northeast and the property line of the commercial uses to the north, STNM4 was chosen to represent noise levels at the dwelling unit of the single-family residential use to the east and the property line of the commercial use to the east of the project site, STNM1 was chosen to represent noise levels at the dwelling units of the single-family residential uses to the southwest, the property line of the mobile home park to the west, and the property line of the commercial use to the west of the project site, and STNM2 was chosen to represent the noise levels at the dwelling units of the single-family residential uses to the northwest of the project site.

Modeled unmitigated construction noise levels when combined with existing measured noise levels reached 74.3 dBA L_{eq} at the nearest commercial property line to the north, 70.5 dBA L_{eq} at the nearest residential dwelling unit to the north, 71 dBA L_{eq} at the nearest residential dwelling unit to the northeast, 76.2 dBA L_{eq} at the nearest commercial property line to the east, up to 70.6 dBA L_{eq} at the nearest residential dwelling unit to the east, up to 72.2 dBA L_{eq} at the nearest residential dwelling unit to the southwest, up to 79.6 dBA L_{eq} at the nearest commercial property line to the west, up to 70.1 dBA L_{eq} at the mobile home park to the west, and up to 67.9 dBA L_{eq} at the nearest residential dwelling unit to the northwest of the project site.

As discussed earlier, construction noise sources are regulated within Section 9.02.110(F) of the City of Beaumont Municipal Code which prohibits construction activities within one-quarter mile of an occupied residence or residences other than between the hours of 6:00 AM and 6:00 PM during the months of June through September and between the hours of 7:00 AM and 6:00 PM during the months of October through May. Furthermore, Section 9.02.110(F) prohibits sound levels at any time to exceed fifty-five dB(A) for intervals of more than fifteen minutes per hour as measured in the interior of the nearest occupied residence or school. The interior noise level is the difference between the projected exterior noise level at the structure's

facade and the noise reduction provided by the structure itself. Typical buildings generally provide a conservative 20 dBA noise level reduction with "windows closed". The projected interior noise level can be estimated by subtracting the building shell design from the predicted exterior noise level. A "windows closed" condition requires mechanical fresh air ventilation (e.g. air conditioning) be provided in habitable dwelling units.

Therefore, project construction noise would be significant if it occurs outside of the hours of 6:00 AM and 6:00 PM during the months of June through September or between the hours of 7:00 AM and 6:00 PM during the months of October through May; or if it results in an exterior noise level at an occupied residence or school that exceeds 75 dBA for any 15-minute period.

Project construction would not be anticipated to exceed the exterior construction noise threshold of 75 dBA at residential or school uses. Furthermore, the project would be required to comply with the hours of construction specified in the City's Code.

Impacts related to construction noise will be further minimized with adherence to the above Municipal Ordinances and implementation of the measures presented in Section 7 of this report.

Noise Impacts to Off-Site Receptors Due to Project Generated Trips

During operation, the proposed project is expected to generate approximately 1,401 average daily trips with 170 trips during the AM peak-hour and 162 trips during the PM peak-hour. A worst-case project generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated at the right of way from the centerline of the analyzed roadway. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the levels are shown for comparative purposes only to show the difference in with and without project conditions. Roadway input parameters including average daily traffic volumes (ADTs), speeds, and vehicle distribution data is shown in Table 11. The potential off-site noise impacts caused by an increase of traffic from operation of the proposed project on the nearby roadways were calculated for the existing year and the existing year plus project condition.

As shown in Table 12, modeled Existing traffic noise levels range between 65.8-72.6 dBA CNEL at the right-of-way of each modeled roadway segment; and the modeled Existing Plus Project traffic noise levels range between 66-72.8 dBA CNEL at the right-of-way of each modeled roadway segment.

As stated previously, for purposes of this project, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they result in an increase of at least 5 dBA CNEL and: (1) the existing noise levels already exceed the applicable land use compatibility standard for the affected sensitive receptors set forth in the Safety Element of the City's General Plan; or (2) the project increases noise levels by at least 5 dBA CNEL and raises the ambient noise level from below the applicable standard to above the applicable standard.

All modeled roadway segments are anticipated to change the noise a nominal amount (between approximately 0.03 to 0.23 dBA CNEL). Therefore, a change in noise level would not be audible and would be considered less than significant. No mitigation is required.

Noise impacts to Off-Site Receptors Due to On-Site Operational Noise

The SoundPLAN noise model was utilized to estimate project peak hour operational noise at noise measurement locations and at adjacent properties in order to determine if it is likely to exceed the City's noise thresholds at nearby receptors. The City's base ambient noise level standards are to be modified to actual existing measured noise levels if the actual measured noise levels are greater than the base ambient noise level per Section 9.02.050 of the City Municipal Code. Measured ambient noise levels generally ranged between 60 and 66 dBA L_{eq} (See Tables 1 and 2). Per Municipal Code9.02.050, actual decibel measurements

exceeding the base ambient noise levels shown in Table 6, shall be employed as the "base ambient noise level". The adjusted base noise levels are presented in Table 13.

As shown on Figures 6-8, modeled daytime peak hour project operational noise operational noise levels are expected to range between 42 and 62 dBA L_{eq}; and nighttime operational noise levels are expected to range between 23 and 46 dBA L_{eq} at nearby land uses. Per Section 9.02.070 of the Municipal Code, all standards were adjusted to be no lower than 57.8 dBA L_{eq} which is the lowest measured noise level in the project vicinity. As shown in Table 13, other standards were adjusted per measured ambient noise levels presented in Tables 1 and 2 as applicable. Noise measurement locations are shown in Figure 5.

As shown in Tables 13 and 14, project operational noise is not expected to violate the City's exterior or interior daytime and nighttime noise standards. This impact would be less than significant. No mitigation is required.

NOISE IMPACTS TO THE PROPOSED PROJECT (NOISE/LAND USE COMPATIBILITY)

In order to evaluate the proposed project in light of the Noise and Land Use Compatibility Standards provided in the City of Beaumont General Plan Noise Element, 2040 traffic noise levels associated with Pennsylvania Avenue and 6th Street was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. The proposed convenience store is located approximately 200 feet south of the centerline of 6th Avenue and approximately 80 feet west of the centerline of Pennsylvania Avenue. Pennsylvania Avenue is designated as a Major Highway and 6th Avenue is designated as an Arterial Highway. FHWA spreadsheets are included in Appendix E. Future noise levels associated with 6th Avenue and Pennsylvania Avenue vehicle traffic is expected to reach 74.5 dBA CNEL at the northeast corner of the proposed convenience store. This noise level falls below the maximum acceptable noise level for commercial land uses as presented in Table 5 and adjusted in Tables 13 and 14. This impact is less than significant. No mitigation is required.

GROUNDBORNE VIBRATION IMPACTS

There are several types of construction equipment that can cause vibration levels high enough to annoy persons in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, as shown in Table 15, a vibratory roller could generate up to 0.21 PPV at a distance of 25 feet; and operation of a large bulldozer (0.089 PPV) at a distance of 25 feet (two of the most vibratory pieces of construction equipment). Groundborne vibration at sensitive receptors associated with this equipment would drop off as the equipment moves away. For example, as the vibratory roller moves further than 100 feet from the sensitive receptors, the vibration associated with it would drop below 0.0026 PPV. It should be noted that these vibration levels are reference levels and may vary slightly depending upon soil type and specific usage of each piece of equipment.

Annoyance to Persons

The primary effect of perceptible vibration is often a concern. However, secondary effects, such as the rattling of a china cabinet, can also occur, even when vibration levels are well below perception. Any effect (primary perceptible vibration, secondary effects, or a combination of the two) can lead to annoyance. The degree to which a person is annoyed depends on the activity in which they are participating at the time of the disturbance. For example, someone sleeping or reading will be more sensitive than someone who is running on a treadmill. Reoccurring primary and secondary vibration effects often lead people to believe that the vibration is damaging their home, although vibration levels are well below minimum thresholds for damage potential.

As shown in Table 3 vibration can be annoying to people in buildings at a PPV of 0.20.

At 55 feet, which is the distance to the closest off-site building, the commercial use to the west, use of a vibratory roller would be expected to generate a PPV of 0.064 and a bulldozer would be expected to generate

a PPV of 0.027. Use of either a vibratory roller or a bulldozer would not be considered annoying to nearby sensitive receptors.

Architectural Damage

Vibration generated by construction activity generally has the potential to damage structures. This damage could be structural damage, such as cracking of floor slabs, foundations, columns, beams, or wells, or cosmetic architectural damage, such as cracked plaster, stucco, or tile.

Table 3 identifies a PPV level of 0.2 as the threshold at which there is a risk to "architectural" damage to normal dwelling units. Temporary vibration levels associated with project construction would be less than significant. No mitigation is required. Vibration worksheets are provided in Appendix G.

Table 9
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	-N/A-	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-N/A-	0
Blasting	Yes	-N/A-	94	-N/A-	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-N/A-	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Forklift[2,3]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-N/A-	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-N/A-	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Pickup Truck	No	50	85	77	9
Paving Equipment	No	50	85	77	9
Pneumatic Tools	No	50	85	85	90
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-N/A-	0
Tractor	No	40	84	-N/A-	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Notes:

(1) Source: FHWA Roadway Construction Noise Model User's Guide January 2006.

(2) Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014 http://www.noisetesting.info/blog/carl-strautins/page-3/

(3) Data provided Leq as measured at the operator. Sound Level at 50 feet is calculated using Inverse Square Law.

Table 10
Construction Noise Levels (L_{eq})

Phase	Receptor Location	Existing Ambient Noise Levels (Leq)[2]	Construction Noise Levels (Leq)	Combined Noise Levels (Leq)	Increase (dB)
Grading	North (Commercial)	67.8	73.2	74.3	6.5
	North (Residential)	67.8	67.2	70.5	2.7
	Northeast (Residential)	67.8	68.1	71.0	3.2
	East (Commercial)	67.9	75.5	76.2	8.3
	East (Residential)	67.9	67.2	70.6	2.7
	Southwest (Residential)	60.9	71.9	72.2	11.3
	West (Commercial)	60.9	79.5	79.6	18.7
	West (Mobile Home Park)	60.9	69.5	70.1	9.2
	Northwest (Residential)	57.8	67.5	67.9	10.1
Building Construction	North (Commercial)	67.8	72.1	73.5	5.7
	North (Residential)	67.8	66.9	70.4	2.6
	Northeast (Residential)	67.8	67.7	70.8	3.0
	East (Commercial)	67.9	75.1	75.9	8.0
	East (Residential)	67.9	66.9	70.4	2.5
	Southwest (Residential)	60.9	71.5	71.9	11.0
	West (Commercial)	60.9	79.1	79.2	18.3
	West (Mobile Home Park)	60.9	69.1	69.7	8.8
	Northwest (Residential)	57.8	67.1	67.6	9.8
Paving	North (Commercial)	67.8	70.2	72.2	4.4
	North (Residential)	67.8	64.3	69.4	1.6
	Northeast (Residential)	67.8	65.1	69.7	1.9
	East (Commercial)	67.9	72.5	73.8	5.9
	East (Residential)	67.9	64.2	69.4	1.5
	Southwest (Residential)	60.9	68.9	69.5	8.6
	West (Commercial)	60.9	76.5	76.6	15.7
	West (Mobile Home Park)	60.9	66.5	67.6	6.7
	Northwest (Residential)	57.8	64.5	65.3	7.5
Architectural Coating	North (Commercial)	67.8	63.8	69.3	1.5
	North (Residential)	67.8	57.8	68.2	0.4
	Northeast (Residential)	67.8	58.6	68.3	0.5
	East (Commercial)	67.9	66.0	70.1	2.2
	East (Residential)	67.9	57.7	68.3	0.4
	Southwest (Residential)	60.9	62.4	64.7	3.8
	West (Commercial)	60.9	70.0	70.5	9.6
	West (Mobile Home Park)	60.9	60.0	63.5	2.6
	Northwest (Residential)	57.8	58.0	60.9	3.1

Notes:

(1) Construction noise worksheets are provided in Appendix D.

(2) Per measured existing ambient noise levels. STNM3 was used for receptors to the north and northeast, STNM4 for receptors to theeast, STNM1 for receptors to the southwest and west, and STNM2 for receptors to the northwest.

Table 11
Project Average Daily Traffic Volumes and Roadway Parameters

Roadway	Segment	Average Daily Traffic Volume[1]		Posted Travel Speeds (MPH)	Site Conditions
		Existing	Existing Plus Project		
6th Street	West of Pennsylvania Avenue	14,400	14,500	35	Hard
	East of Pennsylvania Avenue	11,600	11,700	35	Hard
Pennsylvania Avenue	North of 6th Street	8,300	8,700	30	Hard
	6th Street to Interstate 10 Freeway	13,200	13,900	35	Hard
	South of Interstate 10 Freeway	12,700	13,100	35	Hard

Vehicle Distribution (Light Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (10 PM-7 AM)
Automobiles	75.56	13.96	10.49
Medium Trucks	48.91	2.17	48.91
Heavy Trucks	47.30	5.41	47.30

Vehicle Distribution (Heavy Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (10 PM-7 AM)
Automobiles	75.54	14.02	10.43
Medium Trucks	48.00	2.00	50.00
Heavy Trucks	48.00	2.00	50.00

Notes:

(1) Existing and project average daily traffic volumes obtained from the Sixth at Pennsylvania Beyond Food Mart Project Traffic Impact Analysis (Ganddini Group, Inc., July 1, 2020).

(2) Existing vehicle percentages are based on the Riverside County Industrial Hygiene Letter for Traffic Noise.

Table 12
Change in Existing Noise Levels Along Roadways as a Result of Project (dBA CNEL)

Roadway	Segment	Distance from roadway centerline to right-of-way (feet)[2]	Modeled Noise Levels (dBA CNEL)[1]				
			Existing Without Project at right-of-way	Existing Plus Project at right-of-way	Change in Noise Level	Exceeds Standards[3]	Increase of 5 dB or More?
6th Street	West of Pennsylvania Avenue	44	69.03	69.06	0.03	Yes	No
	East of Pennsylvania Avenue	50	72.02	72.06	0.04	Yes	No
Pennsylvania Avenue	North of 6th Street	39	65.84	66.04	0.20	Yes	No
	6th Street to Interstate 10 Freeway	50	72.58	72.81	0.23	Yes	No
	South of Interstate 10 Freeway	50	72.41	72.55	0.14	Yes	No

Notes:

(1) Exterior noise levels calculated 5 feet above pad elevation, perpendicular to subject roadway.

(2) Right of way per the City of Beaumont General Plan Circulation Element.

(3) Per the City of Beaumont desired maximum standard for single-family detached residential dwelling units (see Table 3).

Table 13
Adjusted Noise Ordinance Standards and Operational Noise Compliance (Exterior)

Receptor Number	Land Use	Noise Ordinance Standard (dBA, Leq) (day/night[1])	Measured Ambient Noise Level (dBA, Leq)[2]	Adjusted Noise Ordinance Standard (dBA, Leq)	Modeled Noise Levels (dBA, Leq) (day/night)	Exceeds Applicable Standards (Day/Night)(Yes/No)
1	Single family residential	55/45	60.9	60.9/60.7	47/20	No/No
2	Multi-family residential	55/45	57.8	57.8/57.8	42/6	No/No
3	Single family residential	55/45	67.8	67.8/57.8	52/21	No/No
4	Single family residential	55/45	67.9	67.9/57.8	51/16	No/No
5	Industrial/Commercial	75/50	60.9	60.9/60.7	49/24	No/No
6	Industrial/Commercial	75/50	67.9	75/57.8	60/25	No/No
7	Industrial/Commercial	75/50	67.8	75/57.8	54/20	No/No
8	Industrial/Commercial	75/50	67.8	75/57.8	55/21	No/No
9	Single family residential	55/45	60.9	60.9/60.7	52/24	No/No
10	Single family residential	55/45	60.9	60.9/60.7	62/24	No/No

Notes:

[1] Daytime = 7:00 AM-10:00 PM and Nighttime = 10:00 PM to 7:00 AM

[2] The lowest measured noise level at the nearest representative noise measurement was used (see Figure 5)

3 Typical construction will provide at least 20 dB exterior to interior noise reduction with windows closed.

Table 14
Adjusted Noise Ordinance Standards and Operational Noise Compliance (Interior)

Receptor Number	Land Use	Noise Ordinance Standard (dBA, Leq) (day/night[1])	Modeled Exterior Noise Levels (dBA, Leq) (day/night)	Estimated Interior Noise Levels With Project Operation[3] (Day)	Estimated Interior Noise Levels With Project Operation[3] (Night)	Exceeds Applicable Standards (Yes/No) (day/night)
1	Single family residential	45/35	47/20	27	0	No/No
2	Multi-family residential	45/35	42/6	22	0	No/No
3	Single family residential	45/35	52/21	32	1	No/No
4	Single family residential	45/35	51/16	31	0	No/No
5	Industrial/Commercial	n/a	n/a	n/a	n/a	n/a
6	Industrial/Commercial	n/a	n/a	n/a	n/a	n/a
7	Industrial/Commercial	n/a	n/a	n/a	n/a	n/a
8	Industrial/Commercial	n/a	n/a	n/a	n/a	n/a
9	Single family residential	45/35	52/24	32	0	No/No
10	Single family[4]	45/35	62/24	42	0	No/No

Notes:

[1] Daytime = 7:00 AM-10:00 PM and Nighttime = 10:00 PM to 7:00 AM

[2] The lowest measured noise level at the nearest representative noise measurement was used (see Figure 5)

[3] Typical construction will provide at least 20 dB exterior to interior noise reduction with windows closed.

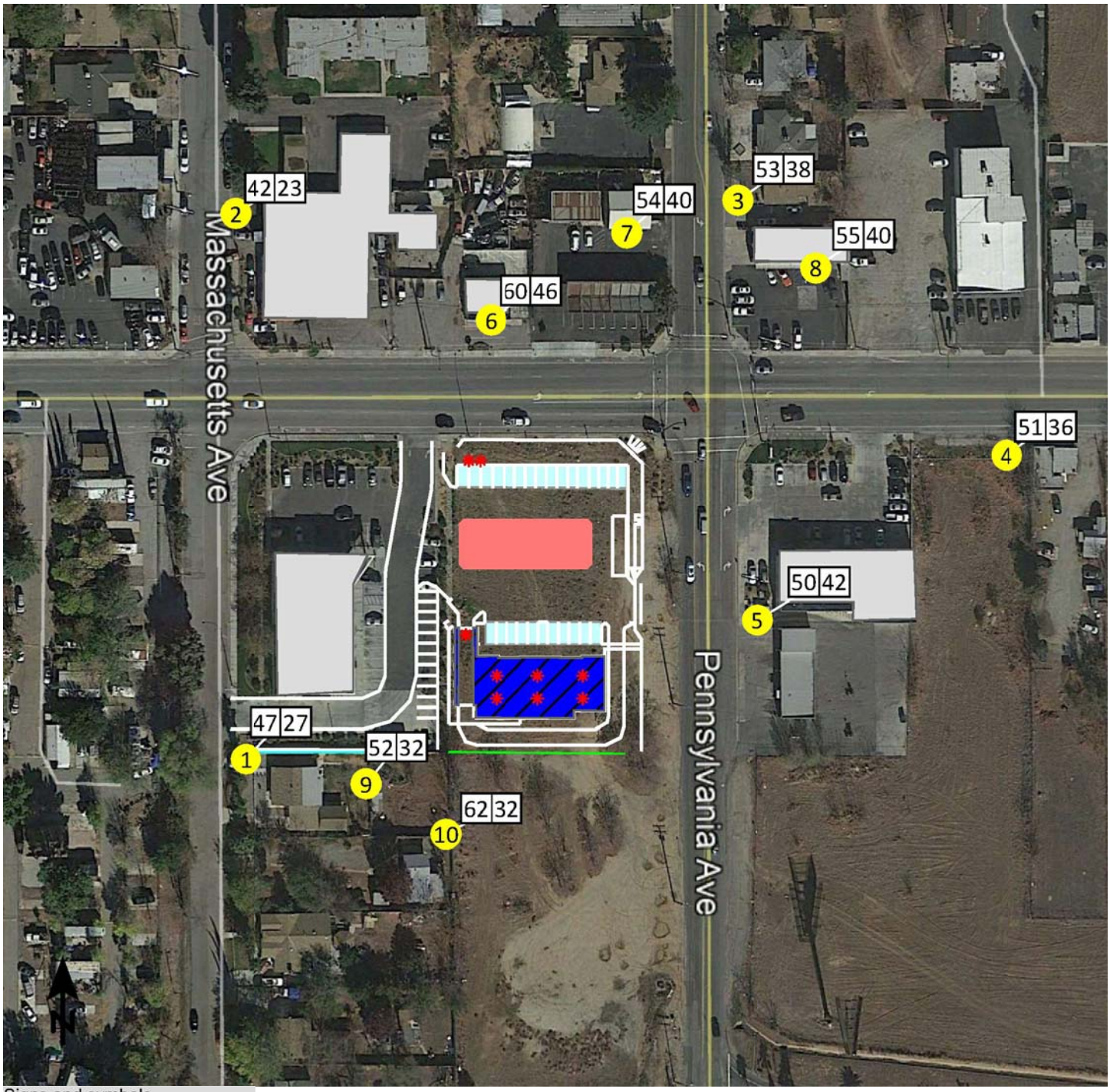
[4] This location is approximately 65 feet closer to Interstate 10 than the nearest representative noise measurement. Adjustments were made accordingly.

Table 15
Construction Equipment Vibration Source Levels

Equipment		PPV at 25 ft, in/sec	Approximate Lv* at 25 ft
Pile Driver (impact)	upper range	1.518	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment Manual, 2018.

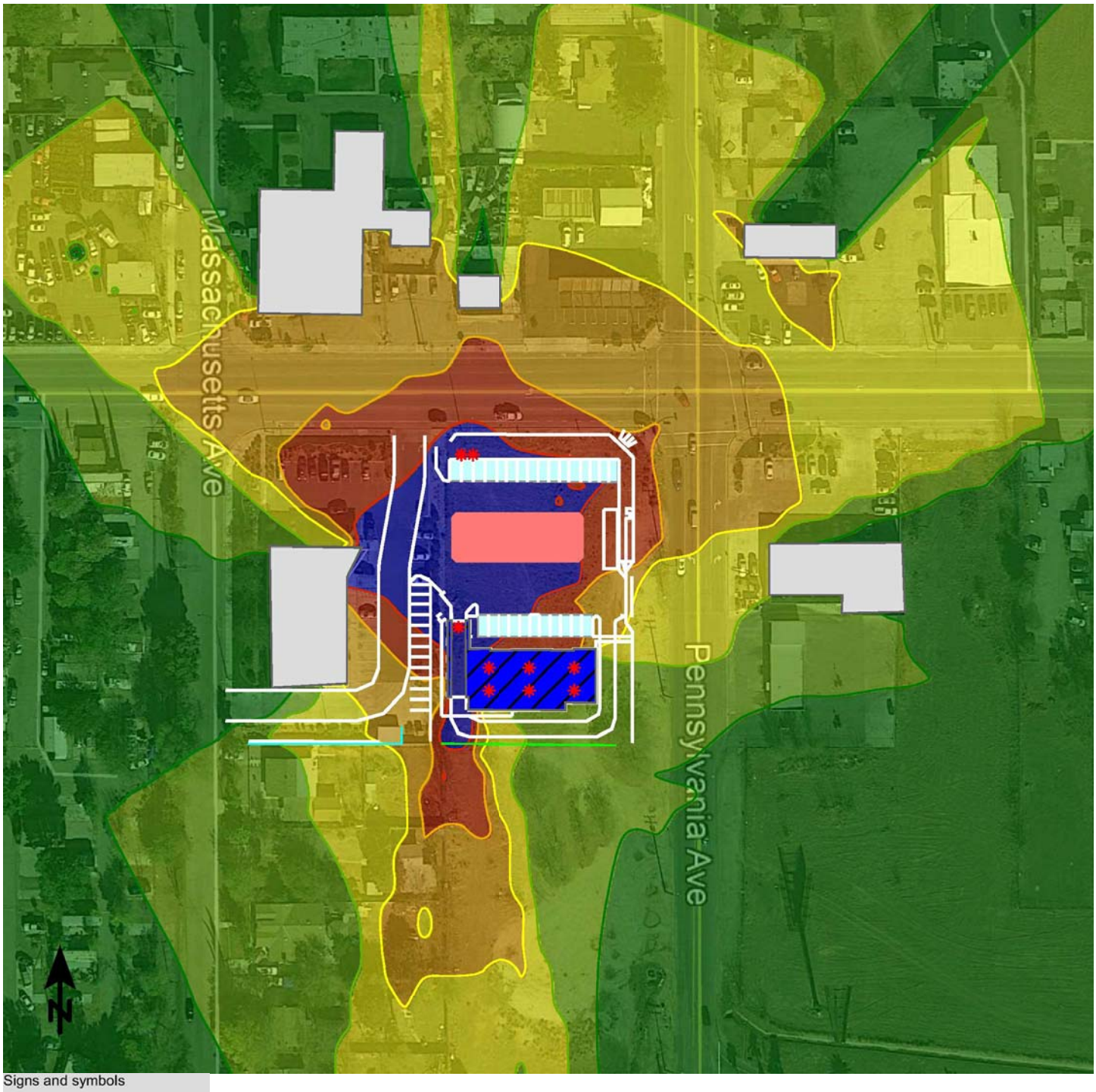
*RMS velocity in decibels, VdB re 1 micro-in/sec



Signs and symbols

- Site Plan
- Existing Wall
- Proposed Wall
- Proposed Building
- Existing Buildings
- Receiver
- Point sources, drying system, HVAC, & vacuums
- Fueling Area
- Parking lot
- Noise Level tables

Figure 6
Operational Noise Levels Peak Hour



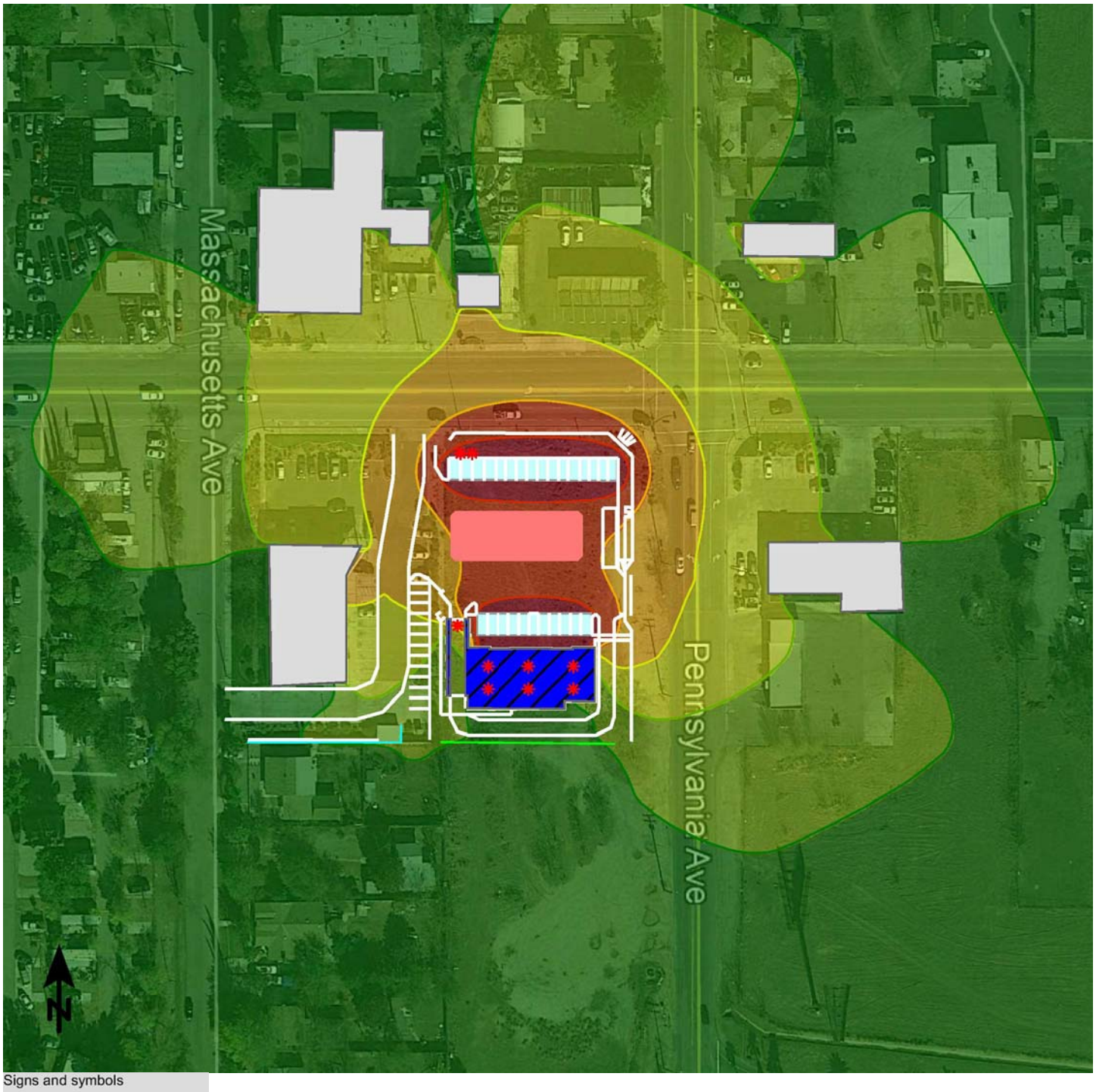
Signs and symbols

- Site Plan
- Existing Wall
- Proposed Wall
- Proposed Building
- Existing Buildings
- Point sources, drying system, HVAC, & vacuums
- Fueling Area
- Parking lot

Levels in dB(A)

- <= 45
- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- > 65

Figure 7
Operational Noise Levels - Daytime



Signs and symbols

- Site Plan
- Existing Wall
- Proposed Wall
- Proposed Building
- Existing Buildings
- Point sources, drying system, HVAC, & vacuums
- Fueling Area
- Parking lot

Levels in dB(A)

- <= 35
- 35 - 40
- 40 - 45
- 45 - 50
- 50 - 55
- > 55

Figure 8
Operational Noise Levels - Nighttime

7. MEASURES TO REDUCE IMPACTS

CONSTRUCTION NOISE REDUCTION MEASURES

In addition to adherence to the City of Beaumont Municipal Code which limits the construction hours of operation, the following measures are recommended to reduce construction noise and vibrations, emanating from the proposed project:

1. During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. Equipment shall be shut off and not left to idle when not in use.

4. The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

5. Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

6. The project proponent shall mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.

7. The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

8. REFERENCES

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APPENDICES

Appendix A List of Acronyms
Appendix B Glossary
Appendix C Noise Measurement field Worksheet
Appendix D Construction Noise Modeling
Appendix E Project Generated Trips FHWA Worksheets
Appendix F SoundPLAN Worksheets
Appendix G Vibration Worksheets

Appendix A

List of Acronyms

Term	Definition
ADT	Average Daily Traffic
ANSI	American National Standard Institute
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
D/E/N	Day / Evening / Night
dB	Decibel
dBA or dB(A)	Decibel "A-Weighted"
dBA/DD	Decibel per Double Distance
dBA L_{eq}	Average Noise Level over a Period of Time
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
L_{02},L_{08},L_{50},L_{90}	A-weighted Noise Levels at 2 percent, 8 percent, 50 percent, and 90 percent, respectively, of the time period
DNL	Day-Night Average Noise Level
$L_{eq(x)}$	Equivalent Noise Level for '"x" period of time
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Level of Noise (measured using a sound level meter)
L_{min}	Minimum Level of Noise (measured using a sound level meter)
LOS C	Level of Service C
OPR	California Governor's Office of Planning and Research
PPV	Peak Particle Velocities
RCNM	Road Construction Noise Model
REMEL	Reference Energy Mean Emission Level
RMS	Root Mean Square

APPENDIX B

GLOSSARY

Term	Definition
Ambient Noise Level	The all-encompassing noise environment associated with a given environment, at a specified time, usually a composite of sound from many sources, at many directions, near and far, in which usually no particular sound is dominant.
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear.
CNEL	Community Noise Equivalent Level. CNEL is a weighted 24-hour noise level that is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours.
Decibel, dB	A logarithmic unit of noise level measurement that relates the energy of a noise source to that of a constant reference level; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
DNL, Ldn	Day Night Level. The DNL, or Ldn is a weighted 24-hour noise level that is obtained by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the nighttime hours.
Equivalent Continuous Noise Level, L_{eq}	A level of steady state sound that in a stated time period, and a stated location, has the same A-weighted sound energy as the time-varying sound.
Fast/Slow Meter Response	The fast and slow meter responses are different settings on a sound level meter. The fast response setting takes a measurement every 100 milliseconds, while a slow setting takes one every second.
Frequency, Hertz	In a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., the number of cycles per second).
L_{02}, L_{08}, L_{50}, L_{90}	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level, 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period, respectively.
L_{max}, L_{min}	L_{max} is the RMS (root mean squared) maximum level of a noise source or environment measured on a sound level meter, during a designated time interval, using fast meter response. L_{min} is the minimum level.
Offensive/ Offending/ Intrusive Noise	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of sound depends on its amplitude, duration, frequency, and time of occurrence, and tonal information content as well as the prevailing ambient noise level.
Root Mean Square (RMS)	A measure of the magnitude of a varying noise source quantity. The name derives from the calculation of the square root of the mean of the squares of the values. It can be calculated from either a series of lone values or a continuous varying function.

Appendix C

Noise Measurement field Worksheet

Noise Measurement
Field Data

Project Name: Sixth Street & Pennsylvania Ave, City of Beaumont. **Date:** June 30, 2020

Project #: JN 19268

Noise Measurement #: STNM1 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Gallagher

Nearest Address or Cross Street: 530 Massachusetts Avenue, Beaumont, California.

Site Description (Type of Existing Land Use and any other notable features): Project site: Vacant site, 6th St to north, Pennsylvania Ave to east, vacant lot to south, commecial to west, & residential to southwest. Noise Measurement Site: Massachusetts Ave to west with residential further west, residential to east, & commercial to northeast.

Weather: Sunny, clear blue skies, dust/ smog near horizon. **Settings:** SLOW FAST

Temperature: 79 deg F **Wind:** 13 mph **Humidity:** 33% **Terrain:** Flat

Start Time: 1:40 PM **End Time:** 1:55 PM **Run Time:**

Leq: 60.9 dB

Lmax 68.2 dB

L2 64.1 dB

L8 62.8 dB

L25 61.7 dB

L50 60.8 dB

Primary Noise Source: Traffic ambiance from Sixth Street to the north, 10 FWY to the south and other surrounding roads.

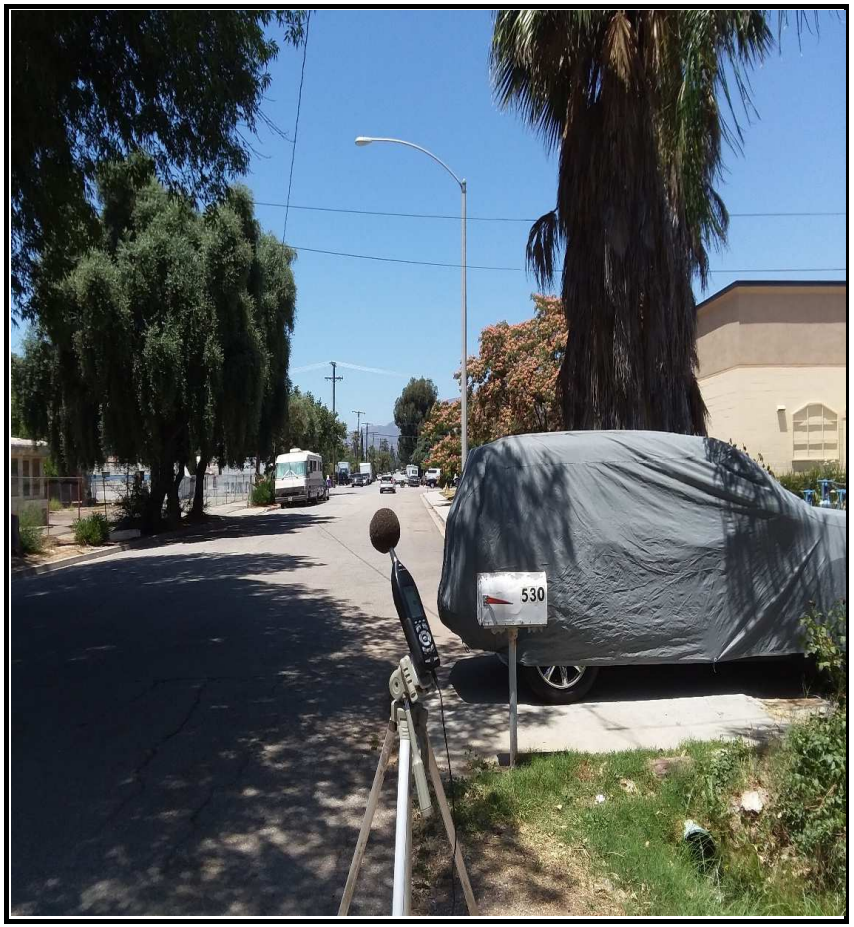
Secondary Noise Sources: Bird song, residential ambiance, overhead propellor aircraft, sporadic, distant shop vacuum cleaner in use.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CAL250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2733
FACTORY CALIBRATION DATE:	4/9/2020	**FACTORY CALIBRATION DATE:**	4/2/2020
FIELD CALIBRATION DATE:	6/30/2020		

ganddini

Noise Measurement
Field Data

PHOTOS:



STNM1 looking N up Massachusetts Ave towards Sixth street intersection.

STNM1 looking south down Massacuusetts Ave towards S end of Avenue and 10 FWY just behind trees and vegetation at end of Avenue.

Summary	
File Name on Meter	LxT_Data.028
File Name on PC	SLM_0003099_LxT_Data_028.00.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.402
User	Ian Edward Gallagher
Location	STNM1 JN 19268 33°55'42.61"N 116°58'2.56"W
Job Description	15 minute noise measurement (1 x 15 minutes)

Measurement	
Start	2020-06-30 13:40:35
Stop	2020-06-30 13:55:35
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre Calibration	2020-06-30 13:40:20
Post Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	122.5 dB

Results		
LAeq	60.9	
LAE	90.5	
EA	124.182 µPa²h	
EA8	3.974 mPa²h	
EA40	19.869 mPa²h	
LZpeak (max)	2020-06-30 13:52:55	93.4 dB
LASmax	2020-06-30 13:52:25	68.2 dB
LASmin	2020-06-30 13:46:12	55.4 dB
SEA	-99.9 dB	

		Statistics	
LCeq	71.0 dB	**LAI2.00**	64.1 dB
LAeq	60.9 dB	**LAI8.00**	62.8 dB
LCeq - LAeq	10.0 dB	**LAI25.00**	61.7 dB
LAIeq	61.9 dB	**LAI50.00**	60.8 dB
LAeq	60.9 dB	**LAI66.60**	60.1 dB
LAIeq - LAeq	1.0 dB	**LAI90.00**	58.2 dB
# Overloads	0		

Noise Measurement
Field Data

Project Name: Sixth Street & Pennsylvania Ave, City of Beaumont. **Date:** June 30, 2020

Project #: JN 19268

Noise Measurement #: STNM2 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Gallagher

Nearest Address or Cross Street: 1100 East 6th Street, Beaumont, California.

Site Description (Type of Existing Land Use and any other notable features): Project site: Vacant site, 6th St to north, Pennsylvania Ave to east, vacant lot to south, commecial to west, & residential to southwest. Noise Measurement Site: Massachusetts Ave to west with residential and commercial (auto shop) further west, residential to east, & commercial (auto shop) to southeast.

Weather: Sunny, clear blue skies, dust/ smog near horizon. **Settings:** SLOW FAST

Temperature: 79 deg F **Wind:** 13 mph **Humidity:** 33% **Terrain:** Flat

Start Time: 2:10 PM **End Time:** 2:25 PM **Run Time:**

Leq: 57.8 dB

Lmax 73.9 dB

L2 65.5 dB

L8 61.8 dB

L25 57.4 dB

L50 54.8 dB

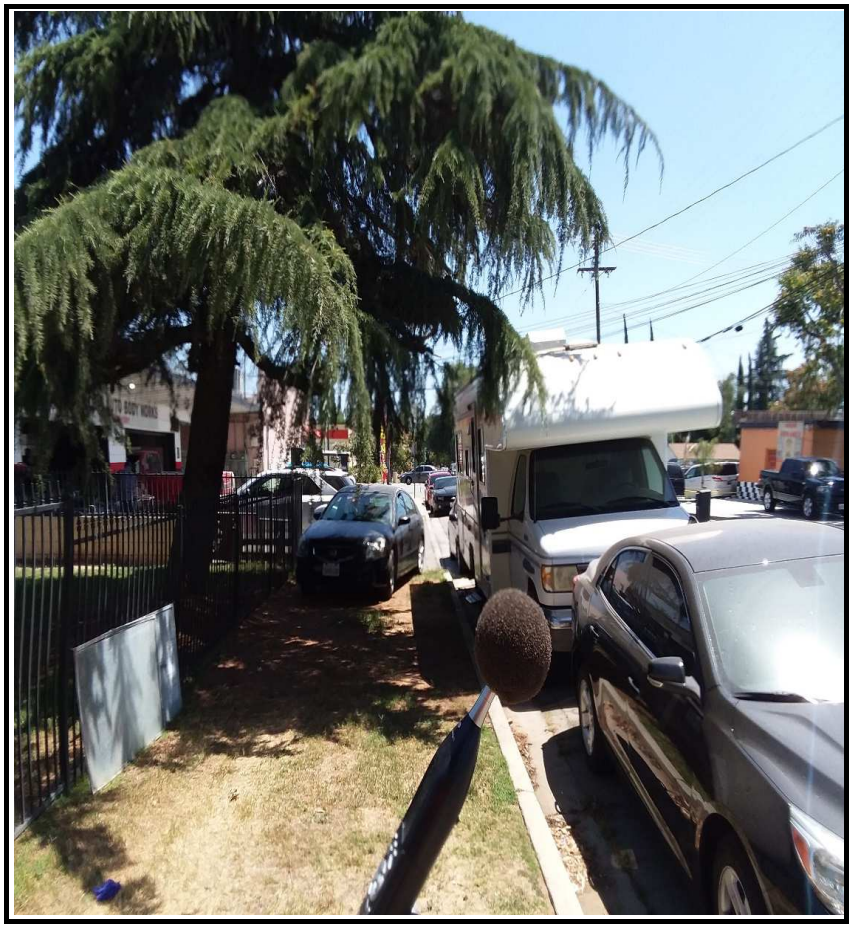
Primary Noise Source: Autobody shop noise from autobody shop, 1100 E 6th Street. Air hose, pneumatic wrench, compressor, grinder all in operation, other work ambiance.

Secondary Noise Sources: Bird song, residential ambiance, overhead propellor aircraft. One car passed microphone along Massachusetts Ave during sample, other traffic ambiance.

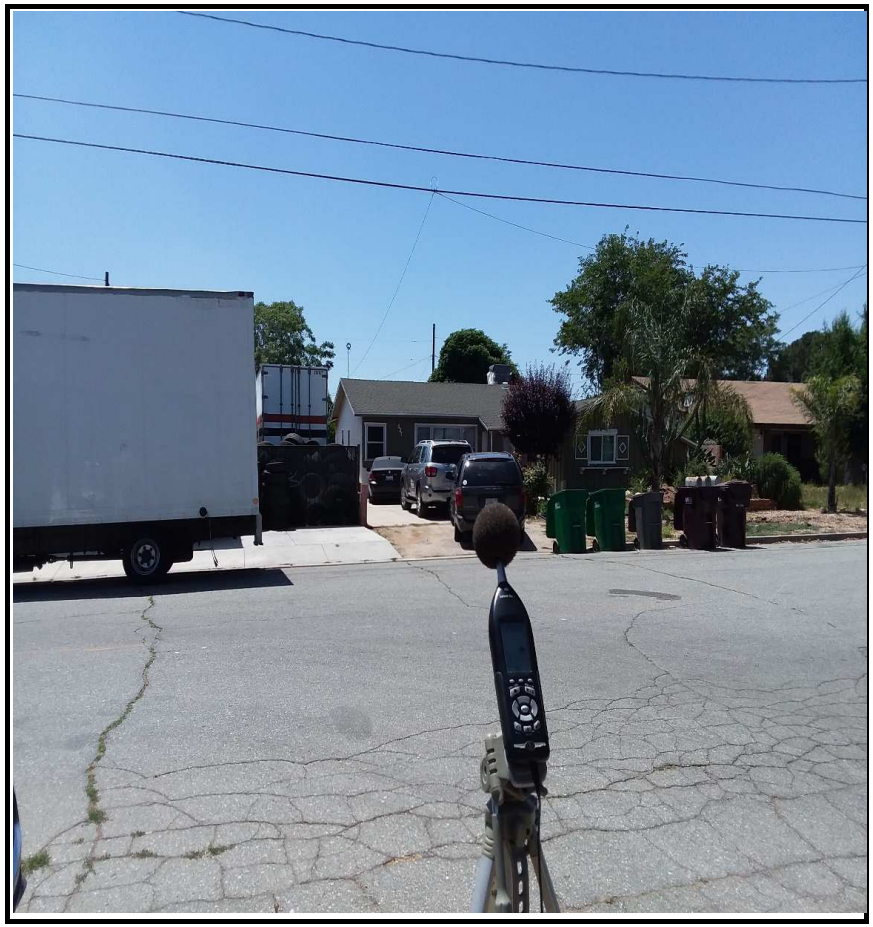
NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CAL250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2733
FACTORY CALIBRATION DATE:	4/9/2020	**FACTORY CALIBRATION DATE:**	4/2/2020
FIELD CALIBRATION DATE:	6/30/2020		

Noise Measurement
Field Data

PHOTOS:



STNM2 looking S past autobody shop, 1100 E 6th St, Beaumont towards E 6th St & Massachusetts Ave intersection.



STNM2 looking NW across Massachusetts Avenue towards residence 637 Massachusetts Avenue, Beaumont.

Summary	
File Name on Meter	LxT_Data.029
File Name on PC	SLM_0003099_LxT_Data_029.00.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.402
User	Ian Edward Gallagher
Location	STNM2 JN 19268 33°55'47.96"N 116°58'2.30"W
Job Description	15 minute noise measurement (1 x 15 minutes)

Measurement	
Start	2020-06-30 14:10:10
Stop	2020-06-30 14:25:10
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre Calibration	2020-06-30 14:09:55
Post Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	122.7 dB

Results			
LAeq	57.8		
LAE	87.3		
EA	60.282 µPa²h		
EA8	1.929 mPa²h		
EA40	9.645 mPa²h		
LZpeak (max)	2020-06-30 14:24:54	101.6 dB	
LASmax	2020-06-30 14:17:35	73.9 dB	
LASmin	2020-06-30 14:12:50	49.5 dB	
SEA	-99.9 dB		
			Statistics
LCeq	68.6 dB		**LAI2.00** 65.5 dB
LAeq	57.8 dB		**LAI8.00** 61.8 dB
LCeq - LAeq	10.8 dB		**LAI25.00** 57.4 dB
LAIeq	60.6 dB		**LAI50.00** 54.8 dB
LAeq	57.8 dB		**LAI66.60** 53.5 dB
LAIeq - LAeq	2.8 dB		**LAI90.00** 52.2 dB
# Overloads	0		

Noise Measurement
Field Data

Project Name: Sixth Street & Pennsylvania Ave, City of Beaumont. **Date:** June 30, 2020

Project #: JN 19268

Noise Measurement #: STNM3 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Gallagher

Nearest Address or Cross Street: 612 Pennsylvania Avenue, Beaumont, California.

Site Description (Type of Existing Land Use and any other notable features): Project site: Vacant site, 6th St to north, Pennsylvania Ave to east, vacant lot to south, commecial to west, & residential to southwest. Noise Measurement Site: Pennsylvania Ave to west with residential and commercial further west, residential to east, & commercial to southeast.

Weather: Sunny, clear blue skies, dust/ smog near horizon. **Settings:** SLOW FAST

Temperature: 80 deg F **Wind:** 12mph **Humidity:** 32% **Terrain:** Flat

Start Time: 2:39 PM **End Time:** 2:54 PM **Run Time:**

Leq: 67.8 dB **Primary Noise Source:** 145 vehicles passed microphone traveling along Pennsylvania Avenue.

Lmax 84.5 dB Vehicles traveling along 6th Street and other surrounding roads.

L2 76.3 dB **Secondary Noise Sources:** Bird song, residential ambiance, overhead propellor aircraft.

L8 71.4 dB

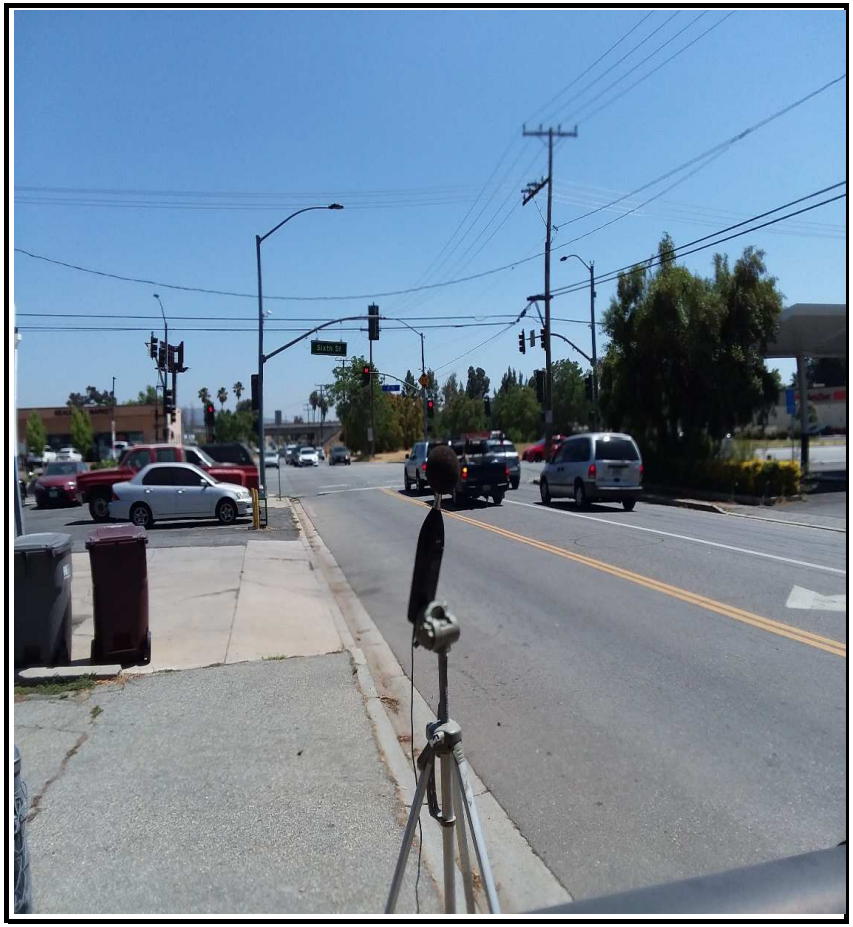
L25 66.8 dB

L50 62.4 dB

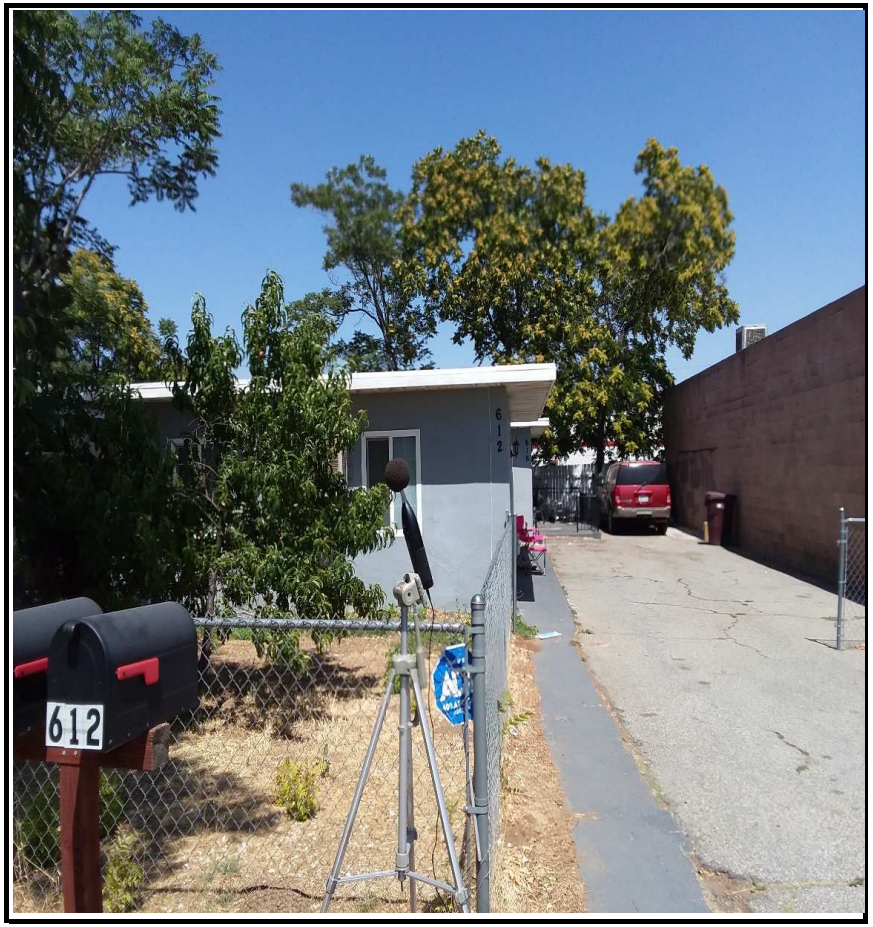
NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CAL250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2733
FACTORY CALIBRATION DATE:	4/9/2020	**FACTORY CALIBRATION DATE:**	4/2/2020
FIELD CALIBRATION DATE:	6/30/2020		

Noise Measurement
Field Data

PHOTOS:



STNM3 looking S down Pennsylvania Ave towards 6th St intersection.



STNM3 looking E towards residence, 612 Pennsylvania Avenue, Beaumont.

Summary	
File Name on Meter	LxT_Data.030
File Name on PC	SLM_0003099_LxT_Data_030.00.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.402
User	Ian Edward Gallagher
Location	STNM3 JN 19268 33°55'47.50"N 116°57'57.58"W
Job Description	15 minute noise measurement (1 x 15 minutes)

Measurement	
Start	2020-06-30 14:39:28
Stop	2020-06-30 14:54:28
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre Calibration	2020-06-30 14:39:13
Post Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	122.8 dB

Results			
LAeq	67.8		
LAE	97.3		
EA	600.393	µPa²h	
EA8	19.213	mPa²h	
EA40	96.063	mPa²h	
LZpeak (max)	2020-06-30 14:51:34	109.7	dB
LASmax	2020-06-30 14:51:34	84.5	dB
LASmin	2020-06-30 14:52:36	55.0	dB
SEA	-99.9	dB	

			Statistics		
LCeq	77.9	dB	**LAI2.00**	76.3	dB
LAeq	67.8	dB	**LAI8.00**	71.4	dB
LCeq - LAeq	10.2	dB	**LAI25.00**	66.8	dB
LAIeq	70.3	dB	**LAI50.00**	62.4	dB
LAeq	67.8	dB	**LAI66.60**	60.8	dB
LAIeq - LAeq	2.5	dB	**LAI90.00**	58.2	dB
# Overloads	0				

Noise Measurement
Field Data

Project Name: Sixth Street & Pennsylvania Ave, City of Beaumont. **Date:** June 30, 2020

Project #: JN 19268

Noise Measurement #: STNM4 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Gallagher

Nearest Address or Cross Street: 1229 East 6th Street, Beaumont, California.

Site Description (Type of Existing Land Use and any other notable features): Project site: Vacant site, 6th St to north, Pennsylvania Ave to east, vacant lot to south, commecial to west, & residential to southwest. Noise Measurement Site: 6th St to north, vacant lot to south, residential to southeast, commercial to southwest.

Weather: Sunny, clear blue skies, dust/ smog near horizon. **Settings:** SLOW FAST

Temperature: 80 deg F **Wind:** 12mph **Humidity:** 32% **Terrain:** Flat

Start Time: 3:12 PM **End Time:** 3:27 PM **Run Time:**

Leq: 67.9 dB

Lmax 81 dB

L2 74.7 dB

L8 72.2 dB

L25 68.7 dB

L50 64.8 dB

Primary Noise Source: 234 vehicles passed microphone traveling along 6th St during 15 miniute measurement, also vehicles along Pennsylvania Ave & other surrounding roads.

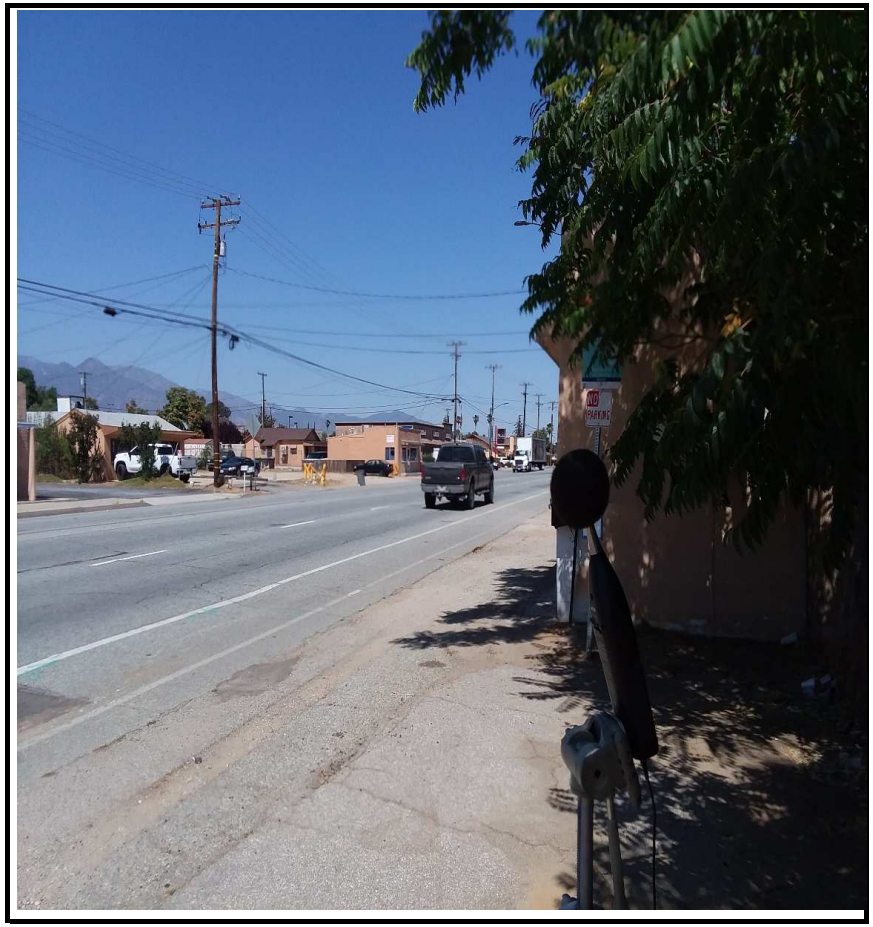
Secondary Noise Sources: Bird song, residential ambiance, overhead propellor aircraft.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CAL250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2733
FACTORY CALIBRATION DATE:	4/9/2020	**FACTORY CALIBRATION DATE:**	4/2/2020
FIELD CALIBRATION DATE:	6/30/2020		

Noise Measurement
Field Data

PHOTOS:

STNM4 looking W down 6th Street towards Pennsylvania Ave intersection.



STNM4 looking E up 6th Street past building, 1229 E 6th Street.

Summary	
File Name on Meter	LxT_Data.031
File Name on PC	SLM_0003099_LxT_Data_031.00.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.402
User	Ian Edward Gallagher
Location	STNM4 JN 19268 33°55'45.50"N 116°57'54.81"W
Job Description	15 minute noise measurement (1 x 15 minutes)

Measurement	
Start	2020-06-30 15:12:05
Stop	2020-06-30 15:27:05
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre Calibration	2020-06-30 15:10:34
Post Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	122.8 dB

Results			
LAeq	67.9		
LAE	97.5		
EA	622.363	µPa²h	
EA8	19.916	mPa²h	
EA40	99.578	mPa²h	
LZpeak (max)	2020-06-30 15:15:44	105.4	dB
LASmax	2020-06-30 15:15:44	81.0	dB
LASmin	2020-06-30 15:21:59	54.6	dB
SEA	-99.9	dB	

			Statistics		
LCeq	76.7	dB	**LAI2.00**	74.7	dB
LAeq	67.9	dB	**LAI8.00**	72.2	dB
LCeq - LAeq	8.8	dB	**LAI25.00**	68.7	dB
LAIeq	69.4	dB	**LAI50.00**	64.8	dB
LAeq	67.9	dB	**LAI66.60**	62.8	dB
LAIeq - LAeq	1.5	dB	**LAI90.00**	59.2	dB
# Overloads	0				

Noise Measurement
Field Data

Project Name: Sixth Street & Pennsylvania Ave, City of Beaumont. **Date:** June 30 to July 1 2020

Project #: JN 19268

Noise Measurement #: LTNM1 Run Time: 24 hours (24 x 1 hours) **Technician:** Ian Gallagher

Nearest Address or Cross Street: 520 Massachusetts Ave, Beaumont, California.

Site Description (Type of Existing Land Use and any other notable features): Project site: Vacant site, 6th St to north, Pennsylvania Ave to east, vacant lot to south, commecial to west, & residential to southwest. Noise Measurement Site: Residential to west, commercial to northwest, project site to north, vacant lot to east and south.

Weather: Clear skies, sunset/rise 8:08PM/ 5:44AM **Settings:** SLOW FAST

Temperature: 80-52 deg F **Wind:** 12mph-calm **Humidity:** 32-60% **Terrain:** Flat

Start Time: 6:00 PM **End Time:** 6:00 PM **Run Time:**

Leq: 64 dB **Primary Noise Source:** Traffic noise from Pennsylvania Ave, 6th St, 10 FWY & other surrounding roads.

Lmax 86.6 dB

L2 68.0 dB **Secondary Noise Sources:** Bird song by day, residential ambiance, overhead propellor aircraft.

L8 66.6 dB Train ambiance, horn, engines & cars from trains on tracks south of LTNM1.

L25 65.0 dB

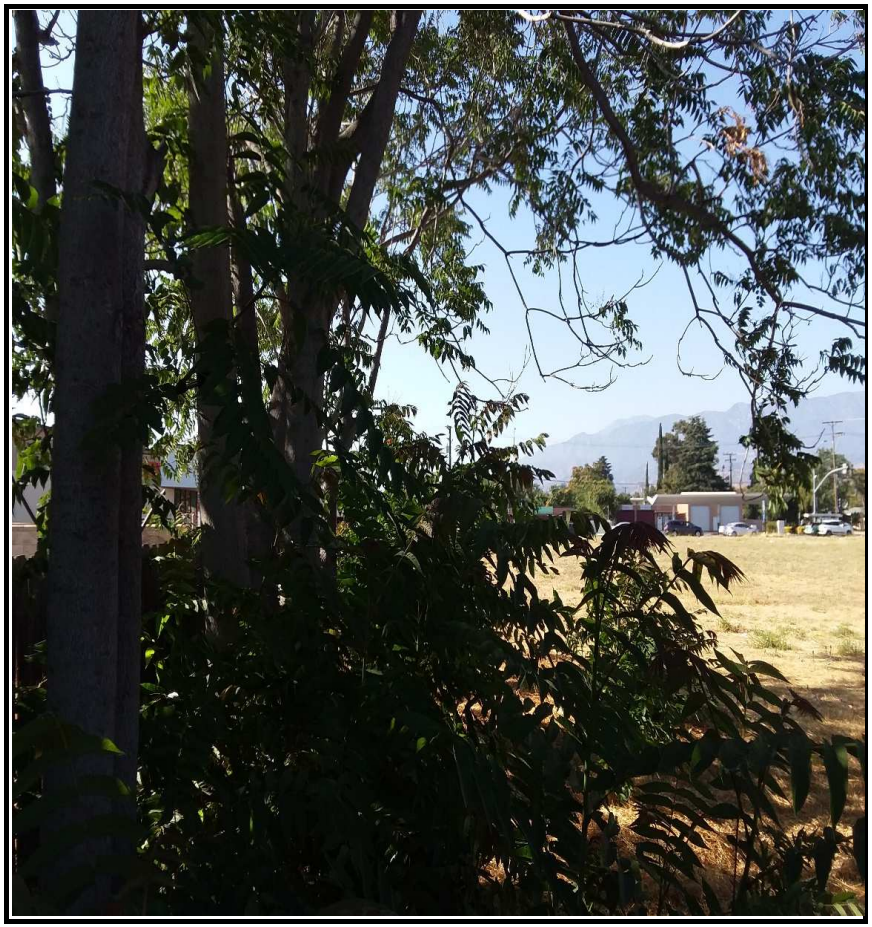
L50 58.7 dB

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CAL250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2733
FACTORY CALIBRATION DATE:	4/9/2020	**FACTORY CALIBRATION DATE:**	4/2/2020
FIELD CALIBRATION DATE:	6/30/2020		

Noise Measurement
Field Data

PHOTOS:

LTNM1 looking at microphone in tree located behind fence of back yard of residence 530 Massachusetts Ave, Beaumont.



LTNM1 looking away from microphone towards Pennsylvania Ave & 6th St intersection.

Summary	
File Name on Meter	LxT_Data.032
File Name on PC	SLM_0003099_LxT_Data_032.00.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.402
User	Ian Edward Gallagher
Location	LTNM1 JN 19268 33°55'42.58"N 116°58'0.10"W
Job Description	24 hour noise measurement (24 x 1 hours)

Measurement	
Start	2020-06-30 18:00:00
Stop	2020-07-01 18:00:00
Duration	24:00:00.0
Run Time	24:00:00.0
Pause	00:00:00.0
Pre Calibration	2020-06-30 16:47:18
Post Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	A Weighting
OBA Max Spectrum	Bin Max
Overload	122.5 dB

Results			
LAeq	64.0		
LAE	113.4		
EA	24.160 mPa²h		
EA8	8.053 mPa²h		
EA40	40.267 mPa²h		
LApeak (max)	2020-07-01 11:03:59	114.1 dB	
LASmax	2020-07-01 15:02:40	86.6 dB	
LASmin	2020-07-01 03:09:41	48.0 dB	
SEA	-99.9 dB		

		Statistics	
LCeq	71.0 dB	**LAI2.00**	68.0 dB
LAeq	64.0 dB	**LAI8.00**	66.6 dB
LCeq - LAeq	7.0 dB	**LAI25.00**	65.0 dB
LAIeq	65.4 dB	**LAI50.00**	63.3 dB
LAeq	64.0 dB	**LAI90.00**	58.7 dB
LAIeq - LAeq	1.4 dB	**LAI99.00**	53.9 dB
# Overloads	0		

Record #	Date	Time	Run Duration	Run Time	Pause	LAeq	LASmin	LASmin Time	LASmax	LASmax Time	LAS2.00	LAS8.00	LAS25.00	LAS50.00	LAS90.00	LAS99.00
1	2020-06-30	18:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.1	55.1	18:14:31	75.3	18:52:28	67.6	66.4	65.0	63.7	61.2	59.2
2	2020-06-30	19:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.5	57.4	19:24:26	77.6	19:21:47	68.2	67.0	65.5	63.9	61.0	58.5
3	2020-06-30	20:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.4	55.5	20:29:57	83.6	20:44:05	68.0	66.8	65.1	63.5	60.5	58.1
4	2020-06-30	21:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.6	54.7	21:56:50	81.0	21:34:40	67.6	66.1	64.4	62.6	59.4	56.8
5	2020-06-30	22:00:00	01:00:00.0	01:00:00.0	00:00:00.0	62.5	52.0	22:55:33	69.6	22:04:06	67.2	65.8	63.7	61.6	57.8	54.6
6	2020-06-30	23:00:00	01:00:00.0	01:00:00.0	00:00:00.0	62.3	51.5	23:29:15	82.1	23:25:05	66.9	64.9	62.8	60.7	56.7	53.6
7	2020-07-01	00:00:00	01:00:00.0	01:00:00.0	00:00:00.0	61.8	50.5	00:39:50	73.8	00:52:21	66.8	65.1	62.9	60.6	56.6	53.1
8	2020-07-01	01:00:00	01:00:00.0	01:00:00.0	00:00:00.0	61.2	49.3	01:41:37	82.8	01:26:41	66.0	64.0	61.6	59.1	54.2	51.2
9	2020-07-01	02:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.7	48.2	02:35:50	79.7	02:41:59	66.0	64.0	61.5	59.0	54.7	51.0
10	2020-07-01	03:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.9	48.0	03:09:41	70.8	03:38:49	66.0	64.4	62.1	59.6	55.3	50.9
11	2020-07-01	04:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.1	49.4	04:07:46	86.2	04:34:29	67.2	65.5	63.6	61.5	57.7	54.4
12	2020-07-01	05:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.4	53.1	05:20:13	74.7	05:51:07	67.7	66.2	64.4	62.6	59.6	56.2
13	2020-07-01	06:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.6	55.1	06:08:51	82.0	06:57:49	68.4	66.8	65.4	63.9	61.0	58.5
14	2020-07-01	07:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.4	57.8	07:06:40	70.3	07:07:17	67.7	66.7	65.3	64.0	61.3	59.3
15	2020-07-01	08:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.6	55.7	08:29:13	81.4	08:52:45	68.4	66.8	65.3	63.9	61.1	59.1
16	2020-07-01	09:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.8	55.6	09:06:07	78.4	09:16:56	68.4	67.1	65.6	64.3	61.7	59.7
17	2020-07-01	10:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.7	57.7	10:49:31	75.0	10:17:40	68.5	67.0	65.6	64.2	61.6	59.8
18	2020-07-01	11:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.8	58.0	11:33:26	82.6	11:03:59	68.2	67.0	65.6	64.3	61.7	60.1
19	2020-07-01	12:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.5	57.7	12:37:55	76.7	12:01:36	68.0	66.7	65.3	64.0	61.7	59.9
20	2020-07-01	13:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.9	58.6	13:17:09	78.3	13:11:22	68.5	66.7	65.5	64.3	62.1	60.2
21	2020-07-01	14:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.9	57.9	14:06:44	76.3	14:58:49	68.0	66.9	65.7	64.6	62.3	59.8
22	2020-07-01	15:00:00	01:00:00.0	01:00:00.0	00:00:00.0	66.0	59.7	15:34:47	86.6	15:02:40	69.0	67.6	66.4	65.3	63.1	61.4
23	2020-07-01	16:00:00	01:00:00.0	01:00:00.0	00:00:00.0	65.3	58.3	16:47:56	80.4	16:29:09	69.0	67.5	65.9	64.5	62.0	60.1
24	2020-07-01	17:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.8	57.8	17:10:49	83.4	17:39:09	68.8	66.4	64.9	63.6	61.1	59.2

APPENDIX D

CONSTRUCTION NOISE MODELING

Receptor - Commercial to North

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Receptor Item Leq, dBA	Required Mitigation	Mitigated Noise Level	Reduction (dBA Leq)
Grading									
Grader	1	85	205	40	0.40	68.8	Muffler (10 dB Reduction)	58.8	
Rubber Tired Dozers	1	85	205	40	0.40	68.8	Muffler (10 dB Reduction)	58.8	10.0
Tractors/Loaders/Backhoes	1	84	205	40	0.40	67.8	Muffler (10 dB Reduction)	57.8	
						73.2		63.2	
Building Construction									
Cranes	1	83	205	16	0.16	62.8	Muffler (10 dB Reduction)	52.8	
Forklifts [2]	1	48	205	40	0.40	31.8	n/a	31.8	
Generator Set	1	81	205	50	0.50	65.7	Enclosure or Acoustic Tent (10 dB Reduction)	55.7	7.0
Welders	3	74	205	40	1.20	62.5	n/a	62.5	
Tractors/Loaders/Backhoes	2	84	240	40	0.80	69.4	Muffler (10 dB Reduction)	59.4	
						72.1		65.1	
Paving									
Cement and Mortar Mixers	1	79	205	40	0.40	62.8	Muffler (10 dB Reduction)	52.8	
Pavers	1	77	205	50	0.50	61.7	Muffler (10 dB Reduction)	51.7	
Paving Equipment	1	85	205	20	0.20	65.8	Muffler (10 dB Reduction)	55.8	10.0
Rollers	1	80	205	20	0.20	60.8	Muffler (10 dB Reduction)	50.8	
Tractors/Loaders/Backhoes	1	84	205	40	0.40	67.8	Muffler (10 dB Reduction)	57.8	
						70.2		60.2	
Architectural Coating									
Air Compressors	1	80	205	40	0.40	63.8	Enclosure or Acoustic Tent (10 dB Reduction)	53.8	10.0
						63.8		53.8	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA RoadwayConstruciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Residential to North (at closest portion of dwelling unit/structure)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Receptor Item Leq, dBA	Required Mitigation	Mitigated Noise Level	Reduction (dBA Leq)
Grading									
Grader	1	85	408	40	0.40	62.8	Muffler (10 dB Reduction)	52.8	
Rubber Tired Dozers	1	85	408	40	0.40	62.8	Muffler (10 dB Reduction)	52.8	10.0
Tractors/Loaders/Backhoes	1	84	408	40	0.40	61.8	Muffler (10 dB Reduction)	51.8	
						67.2		57.2	
Building Construction									
Cranes	1	83	408	16	0.16	56.8	Muffler (10 dB Reduction)	46.8	
Forklifts [2]	1	48	408	40	0.40	25.8	n/a	25.8	
Generator Set	1	81	408	50	0.50	59.8	Enclosure or Acoustic Tent (10 dB Reduction)	49.8	7.4
Welders	3	74	408	40	1.20	56.6	n/a	56.6	
Tractors/Loaders/Backhoes	2	84	408	40	0.80	64.8	Muffler (10 dB Reduction)	54.8	
						66.9		59.5	
Paving									
Cement and Mortar Mixers	1	79	408	40	0.40	56.8	Muffler (10 dB Reduction)	46.8	
Pavers	1	77	408	50	0.50	55.8	Muffler (10 dB Reduction)	45.8	
Paving Equipment	1	85	408	20	0.20	59.8	Muffler (10 dB Reduction)	49.8	10.0
Rollers	1	80	408	20	0.20	54.8	Muffler (10 dB Reduction)	44.8	
Tractors/Loaders/Backhoes	1	84	408	40	0.40	61.8	Muffler (10 dB Reduction)	51.8	
						64.3		54.3	
Architectural Coating									
Air Compressors	1	80	408	40	0.40	57.8	Enclosure or Acoustic Tent (10 dB Reduction)	47.8	10.0
						57.8		47.8	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA RoadwayConstruciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Residential to Northeast (at closest portion of dwelling unit/structure)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Receptor Item Leq, dBA	Required Mitigation	Mitigated Noise Level	Reduction (dBA Leq)
Grading									
Grader	1	85	370	40	0.40	63.6	Muffler (10 dB Reduction)	53.6	
Rubber Tired Dozers	1	85	370	40	0.40	63.6	Muffler (10 dB Reduction)	53.6	10.0
Tractors/Loaders/Backhoes	1	84	370	40	0.40	62.6	Muffler (10 dB Reduction)	52.6	
						68.1		58.1	
Building Construction									
Cranes	1	83	370	16	0.16	57.7	Muffler (10 dB Reduction)	47.7	
Forklifts [2]	1	48	370	40	0.40	26.6	n/a	26.6	
Generator Set	1	81	370	50	0.50	60.6	Enclosure or Acoustic Tent (10 dB Reduction)	50.6	7.4
Welders	3	74	370	40	1.20	57.4	n/a	57.4	
Tractors/Loaders/Backhoes	2	84	370	40	0.80	65.6	Muffler (10 dB Reduction)	55.6	
						67.7		60.4	
Paving									
Cement and Mortar Mixers	1	79	370	40	0.40	57.6	Muffler (10 dB Reduction)	47.6	
Pavers	1	77	370	50	0.50	56.6	Muffler (10 dB Reduction)	46.6	
Paving Equipment	1	85	370	20	0.20	60.6	Muffler (10 dB Reduction)	50.6	10.0
Rollers	1	80	370	20	0.20	55.6	Muffler (10 dB Reduction)	45.6	
Tractors/Loaders/Backhoes	1	84	370	40	0.40	62.6	Muffler (10 dB Reduction)	52.6	
						65.1		55.1	
Architectural Coating									
Air Compressors	1	80	370	40	0.40	58.6	Enclosure or Acoustic Tent (10 dB Reduction)	48.6	10.0
						58.6		48.6	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA RoadwayConstruciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Commercial to East

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Receptor Item Leq, dBA	Required Mitigation	Mitigated Noise Level	Reduction (dBA Leq)
Grading									
Grader	1	85	158	40	0.40	71.0	Muffler (10 dB Reduction)	61.0	
Rubber Tired Dozers	1	85	158	40	0.40	71.0	Muffler (10 dB Reduction)	61.0	10.0
Tractors/Loaders/Backhoes	1	84	158	40	0.40	70.0	Muffler (10 dB Reduction)	60.0	
						75.5		65.5	
Building Construction									
Cranes	1	83	158	16	0.16	65.0	Muffler (10 dB Reduction)	55.0	
Forklifts [2]	1	48	158	40	0.40	34.0	n/a	34.0	
Generator Set	1	81	158	50	0.50	68.0	Enclosure or Acoustic Tent (10 dB Reduction)	58.0	7.4
Welders	3	74	158	40	1.20	64.8	n/a	64.8	
Tractors/Loaders/Backhoes	2	84	158	40	0.80	73.0	Muffler (10 dB Reduction)	63.0	
						75.1		67.8	
Paving									
Cement and Mortar Mixers	1	79	158	40	0.40	65.0	Muffler (10 dB Reduction)	55.0	
Pavers	1	77	158	50	0.50	64.0	Muffler (10 dB Reduction)	54.0	
Paving Equipment	1	85	158	20	0.20	68.0	Muffler (10 dB Reduction)	58.0	10.0
Rollers	1	80	158	20	0.20	63.0	Muffler (10 dB Reduction)	53.0	
Tractors/Loaders/Backhoes	1	84	158	40	0.40	70.0	Muffler (10 dB Reduction)	60.0	
						72.5		62.5	
Architectural Coating									
Air Compressors	1	80	158	40	0.40	66.0	Enclosure or Acoustic Tent (10 dB Reduction)	56.0	10.0
						66.0		56.0	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA RoadwayConstruciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Residential to East (at closest portion of dwelling unit/structure)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Receptor Item Leq, dBA	Required Mitigation	Mitigated Noise Level	Reduction (dBA Leq)
Grading									
Grader	1	85	410	40	0.40	62.7	Muffler (10 dB Reduction)	52.7	
Rubber Tired Dozers	1	85	410	40	0.40	62.7	Muffler (10 dB Reduction)	52.7	10.0
Tractors/Loaders/Backhoes	1	84	410	40	0.40	61.7	Muffler (10 dB Reduction)	51.7	
						67.2		57.2	
Building Construction									
Cranes	1	83	410	16	0.16	56.8	Muffler (10 dB Reduction)	46.8	
Forklifts [2]	1	48	410	40	0.40	25.7	n/a	25.7	
Generator Set	1	81	410	50	0.50	59.7	Enclosure or Acoustic Tent (10 dB Reduction)	49.7	7.4
Welders	3	74	410	40	1.20	56.5	n/a	56.5	
Tractors/Loaders/Backhoes	2	84	410	40	0.80	64.8	Muffler (10 dB Reduction)	54.8	
						66.9		59.5	
Paving									
Cement and Mortar Mixers	1	79	410	40	0.40	56.7	Muffler (10 dB Reduction)	46.7	
Pavers	1	77	410	50	0.50	55.7	Muffler (10 dB Reduction)	45.7	
Paving Equipment	1	85	410	20	0.20	59.7	Muffler (10 dB Reduction)	49.7	10.0
Rollers	1	80	410	20	0.20	54.7	Muffler (10 dB Reduction)	44.7	
Tractors/Loaders/Backhoes	1	84	410	40	0.40	61.7	Muffler (10 dB Reduction)	51.7	
						64.2		54.2	
Architectural Coating									
Air Compressors	1	80	410	40	0.40	57.7	Enclosure or Acoustic Tent (10 dB Reduction)	47.7	10.0
						57.7		47.7	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA RoadwayConstruciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Residential to Southwest (at closest portion of dwelling unit/structure)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Receptor Item Leq, dBA	Required Mitigation	Mitigated Noise Level	Reduction (dBA Leq)
Grading									
Grader	1	85	240	40	0.40	67.4	Muffler (10 dB Reduction)	57.4	
Rubber Tired Dozers	1	85	240	40	0.40	67.4	Muffler (10 dB Reduction)	57.4	10.0
Tractors/Loaders/Backhoes	1	84	240	40	0.40	66.4	Muffler (10 dB Reduction)	56.4	
						71.9		61.9	
Building Construction									
Cranes	1	83	240	16	0.16	61.4	Muffler (10 dB Reduction)	51.4	
Forklifts [2]	1	48	240	40	0.40	30.4	n/a	30.4	
Generator Set	1	81	240	50	0.50	64.4	Enclosure or Acoustic Tent (10 dB Reduction)	54.4	7.4
Welders	3	74	240	40	1.20	61.2	n/a	61.2	
Tractors/Loaders/Backhoes	2	84	240	40	0.80	69.4	Muffler (10 dB Reduction)	59.4	
						71.5		64.1	
Paving									
Cement and Mortar Mixers	1	79	240	40	0.40	61.4	Muffler (10 dB Reduction)	51.4	
Pavers	1	77	240	50	0.50	60.4	Muffler (10 dB Reduction)	50.4	
Paving Equipment	1	85	240	20	0.20	64.4	Muffler (10 dB Reduction)	54.4	10.0
Rollers	1	80	240	20	0.20	59.4	Muffler (10 dB Reduction)	49.4	
Tractors/Loaders/Backhoes	1	84	240	40	0.40	66.4	Muffler (10 dB Reduction)	56.4	
						68.9		58.9	
Architectural Coating									
Air Compressors	1	80	240	40	0.40	62.4	Enclosure or Acoustic Tent (10 dB Reduction)	52.4	10.0
						62.4		52.4	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA RoadwayConstruciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Commercial to West

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Receptor Item Leq, dBA	Required Mitigation	Mitigated Noise Level	Reduction (dBA Leq)
Grading									
Grader	1	85	100	40	0.40	75.0	Muffler (10 dB Reduction)	65.0	
Rubber Tired Dozers	1	85	100	40	0.40	75.0	Muffler (10 dB Reduction)	65.0	10.0
Tractors/Loaders/Backhoes	1	84	100	40	0.40	74.0	Muffler (10 dB Reduction)	64.0	
						79.5		69.5	
Building Construction									
Cranes	1	83	100	16	0.16	69.0	Muffler (10 dB Reduction)	59.0	
Forklifts [2]	1	48	100	40	0.40	38.0	n/a	38.0	
Generator Set	1	81	100	50	0.50	72.0	Enclosure or Acoustic Tent (10 dB Reduction)	62.0	7.4
Welders	3	74	100	40	1.20	68.8	n/a	68.8	
Tractors/Loaders/Backhoes	2	84	100	40	0.80	77.0	Muffler (10 dB Reduction)	67.0	
						79.1		71.7	
Paving									
Cement and Mortar Mixers	1	79	100	40	0.40	69.0	Muffler (10 dB Reduction)	59.0	
Pavers	1	77	100	50	0.50	68.0	Muffler (10 dB Reduction)	58.0	
Paving Equipment	1	85	100	20	0.20	72.0	Muffler (10 dB Reduction)	62.0	10.0
Rollers	1	80	100	20	0.20	67.0	Muffler (10 dB Reduction)	57.0	
Tractors/Loaders/Backhoes	1	84	100	40	0.40	74.0	Muffler (10 dB Reduction)	64.0	
						76.5		66.5	
Architectural Coating									
Air Compressors	1	80	100	40	0.40	70.0	Enclosure or Acoustic Tent (10 dB Reduction)	60.0	10.0
						70.0		60.0	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA RoadwayConstruciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Mobile Home Park to West

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Receptor Item Leq, dBA	Required Mitigation	Mitigated Noise Level	Reduction (dBA Leq)
Grading									
Grader	1	85	315	40	0.40	65.0	Muffler (10 dB Reduction)	55.0	
Rubber Tired Dozers	1	85	315	40	0.40	65.0	Muffler (10 dB Reduction)	55.0	10.0
Tractors/Loaders/Backhoes	1	84	315	40	0.40	64.0	Muffler (10 dB Reduction)	54.0	
						69.5		59.5	
Building Construction									
Cranes	1	83	315	16	0.16	59.1	Muffler (10 dB Reduction)	49.1	
Forklifts [2]	1	48	315	40	0.40	28.0	n/a	28.0	
Generator Set	1	81	315	50	0.50	62.0	Enclosure or Acoustic Tent (10 dB Reduction)	52.0	7.4
Welders	3	74	315	40	1.20	58.8	n/a	58.8	
Tractors/Loaders/Backhoes	2	84	315	40	0.80	67.0	Muffler (10 dB Reduction)	57.0	
						69.1		61.8	
Paving									
Cement and Mortar Mixers	1	79	315	40	0.40	59.0	Muffler (10 dB Reduction)	49.0	
Pavers	1	77	315	50	0.50	58.0	Muffler (10 dB Reduction)	48.0	
Paving Equipment	1	85	315	20	0.20	62.0	Muffler (10 dB Reduction)	52.0	10.0
Rollers	1	80	315	20	0.20	57.0	Muffler (10 dB Reduction)	47.0	
Tractors/Loaders/Backhoes	1	84	315	40	0.40	64.0	Muffler (10 dB Reduction)	54.0	
						66.5		56.5	
Architectural Coating									
Air Compressors	1	80	315	40	0.40	60.0	Enclosure or Acoustic Tent (10 dB Reduction)	50.0	10.0
						60.0		50.0	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA RoadwayConstruciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Residential to Northwest (at closest portion of dwelling unit/structure)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Receptor Item Leq, dBA	Required Mitigation	Mitigated Noise Level	Reduction (dBA Leq)
Grading									
Grader	1	85	397	40	0.40	63.0	Muffler (10 dB Reduction)	53.0	
Rubber Tired Dozers	1	85	397	40	0.40	63.0	Muffler (10 dB Reduction)	53.0	10.0
Tractors/Loaders/Backhoes	1	84	397	40	0.40	62.0	Muffler (10 dB Reduction)	52.0	
						67.5		57.5	
Building Construction									
Cranes	1	83	397	16	0.16	57.0	Muffler (10 dB Reduction)	47.0	
Forklifts [2]	1	48	397	40	0.40	26.0	n/a	26.0	
Generator Set	1	81	397	50	0.50	60.0	Enclosure or Acoustic Tent (10 dB Reduction)	50.0	7.4
Welders	3	74	397	40	1.20	56.8	n/a	56.8	
Tractors/Loaders/Backhoes	2	84	397	40	0.80	65.0	Muffler (10 dB Reduction)	55.0	
						67.1		59.8	
Paving									
Cement and Mortar Mixers	1	79	397	40	0.40	57.0	Muffler (10 dB Reduction)	47.0	
Pavers	1	77	397	50	0.50	56.0	Muffler (10 dB Reduction)	46.0	
Paving Equipment	1	85	397	20	0.20	60.0	Muffler (10 dB Reduction)	50.0	10.0
Rollers	1	80	397	20	0.20	55.0	Muffler (10 dB Reduction)	45.0	
Tractors/Loaders/Backhoes	1	84	397	40	0.40	62.0	Muffler (10 dB Reduction)	52.0	
						64.5		54.5	
Architectural Coating									
Air Compressors	1	80	397	40	0.40	58.0	Enclosure or Acoustic Tent (10 dB Reduction)	48.0	10.0
						58.0		48.0	

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA RoadwayConstruciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

APPENDIX E

PROJECT GENERATED TRIPS FHWA WORKSHEETS

Existing Traffic Noise

1	:Id
6th Street	:Road
West of Pennsylvania Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	14400
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	883.15	10.80	4.20	652.66	1.92	1.92	163.48	14.40	5.60
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.71	4.59	0.49	22.40	-2.92	-2.91	16.39	5.84	1.74
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.31	54.90	56.02	63.00	47.39	52.62	56.98	56.15	57.27
	DAY LEQ	65.32		EVENING LEQ	63.48		NIGHT LEQ	61.60	

F	CNEL	69.03	Day hour	89.00
	DAY LEQ	65.32	Absorptive?	no
			Use hour?	no
			GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

1	:Id
6th Street	:Road
West of Pennsylvania Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	14500
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	889.28	10.87	4.23	657.19	1.93	1.93	164.61	14.50	5.64
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.74	4.62	0.52	22.43	-2.89	-2.88	16.42	5.87	1.77
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.34	54.93	56.05	63.03	47.42	52.65	57.01	56.18	57.30
	DAY LEQ	65.35		EVENING LEQ	63.51		NIGHT LEQ	61.63	

CNEL	69.06
DAY LEQ	65.35

Day hour	89.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

2	:Id	ADT	11600
6th Street	:Road	Speed	35
East of Pennsylvania Avenue	:Segment	Distance	50
		Left Angle	-90
		Right Angle	90

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	671.80	13.92	23.20	498.74	2.32	3.87	123.68	19.33	32.22
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	22.53	5.69	7.91	21.23	-2.09	0.13	15.18	7.12	9.34
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.57	55.45	62.88	61.27	47.67	55.10	55.22	56.87	64.31
	DAY LEQ	66.13		EVENING LEQ	62.36		NIGHT LEQ	65.46	

CNEL	72.02	Day hour	90.00
DAY LEQ	66.13	Absorptive?	no
		Use hour?	no
		GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

2	:Id
6th Street	:Road
East of Pennsylvania Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	11700
Speed	35
Distance	50
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	677.59	14.04	23.40	503.04	2.34	3.90	124.74	19.50	32.50
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	22.56	5.73	7.95	21.27	-2.05	0.16	15.21	7.15	9.37
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.60	55.49	62.92	61.31	47.70	55.14	55.25	56.91	64.35
	DAY LEQ	66.16		EVENING LEQ	62.40		NIGHT LEQ	65.50	

CNEL	72.06
DAY LEQ	66.16

Day hour	90.00
Absorptive?	no
Use hour?	no
GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

3	:Id
Pennsylvania Avenue	:Road
North of 6th Street	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	8300
Speed	30
Distance	39
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	509.04	6.22	2.42	376.18	1.10	1.11	94.23	8.30	3.23
Speed in MPH	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	62.51	73.11	78.76	62.51	73.11	78.76	62.51	73.11	78.76
ADJUSTMENTS									
Flow	21.99	2.86	-1.24	20.68	-4.64	-4.63	14.66	4.11	0.01
Distance	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	60.51	51.99	53.53	59.20	44.48	50.14	53.19	53.24	54.78
	DAY LEQ	61.79		EVENING LEQ	59.83		NIGHT LEQ	58.57	

CNEL	65.84
DAY LEQ	61.79

Day hour	91.00
Absorptive?	no
Use hour?	no
GRADE dB	2.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

3	:Id
Pennsylvania Avenue	:Road
North of 6th Street	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	8700
Speed	30
Distance	39
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	533.57	6.52	2.54	394.31	1.16	1.16	98.77	8.70	3.38
Speed in MPH	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	62.51	73.11	78.76	62.51	73.11	78.76	62.51	73.11	78.76
ADJUSTMENTS									
Flow	22.19	3.07	-1.03	20.88	-4.44	-4.43	14.87	4.32	0.22
Distance	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	60.72	52.19	53.74	59.40	44.68	50.34	53.39	53.44	54.99
	DAY LEQ	61.99		EVENING LEQ	60.04		NIGHT LEQ	58.78	

CNEL	66.04
DAY LEQ	61.99

Day hour	91.00
Absorptive?	no
Use hour?	no
GRADE dB	2.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

4	:Id
Pennsylvania Avenue	:Road
6th Street to Interstate 10 Freeway	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	13200
Speed	35
Distance	50
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	764.46	15.84	26.40	567.53	2.64	4.40	140.74	22.00	36.67
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.09	6.25	8.47	21.79	-1.53	0.69	15.74	7.68	9.90
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.13	56.01	63.45	61.83	48.23	55.66	55.78	57.44	64.87
	DAY LEQ	66.69		EVENING LEQ	62.92		NIGHT LEQ	66.02	

CNEL	72.58
DAY LEQ	66.69

Day hour	92.00
Absorptive?	no
Use hour?	no
GRADE dB	3.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

4	:Id
Pennsylvania Avenue	:Road
6th Street to Interstate 10 Freeway	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	13900
Speed	35
Distance	50
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	805.00	16.68	27.80	597.63	2.78	4.63	148.20	23.17	38.61
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.31	6.48	8.69	22.02	-1.31	0.91	15.96	7.90	10.12
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.35	56.23	63.67	62.06	48.45	55.89	56.00	57.66	65.10
	DAY LEQ	66.91		EVENING LEQ	63.15		NIGHT LEQ	66.25	

CNEL	72.81
DAY LEQ	66.91

Day hour	92.00
Absorptive?	no
Use hour?	no
GRADE dB	3.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

5	:Id
Pennsylvania Avenue	:Road
South of Interstate 10 Freeway	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	12700
Speed	35
Distance	50
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	735.51	15.24	25.40	546.03	2.54	4.23	135.40	21.17	35.28
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	22.92	6.08	8.30	21.63	-1.70	0.52	15.57	7.51	9.73
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.96	55.84	63.28	61.67	48.06	55.50	55.61	57.27	64.70
	DAY LEQ	66.52		EVENING LEQ	62.76		NIGHT LEQ	65.86	

CNEL	72.41
DAY LEQ	66.52

Day hour	93.00
Absorptive?	no
Use hour?	no
GRADE dB	4.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

5	:Id
Pennsylvania Avenue	:Road
South of Interstate 10 Freeway	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	13100
Speed	35
Distance	50
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	758.67	15.72	26.20	563.23	2.62	4.37	139.67	21.83	36.39
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	23.05	6.22	8.44	21.76	-1.56	0.65	15.70	7.64	9.86
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.09	55.98	63.41	61.80	48.19	55.63	55.74	57.40	64.84
	DAY LEQ	66.65		EVENING LEQ	62.89		NIGHT LEQ	65.99	

CNEL	72.55
DAY LEQ	66.65

Day hour	93.00
Absorptive?	no
Use hour?	no
GRADE dB	4.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Riverside County Published Mix

Larger than Secondary

Future Traffic Noise - Heavy Mix

6th Avenue

21825.00

	DAYTIME			EVENING			NIGHTTIME				
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	ADT	26000.00
										SPEED	40.00
										DISTANCE	200.00
INPUT PARAMETERS											
Vehicles per hour	1505.76	31.20	52.00	1117.86	5.20	8.67	277.21	43.33	72.22	% A	92.00
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	% MT	3.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	% HT	5.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	LEFT	-90.00
										RIGHT	90.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	CNEL	70.30
ADJUSTMENTS										DAY LEQ	64.71
Flow	25.45	8.62	10.83	24.16	0.83	3.05	18.10	10.04	12.26		
Distance	-6.09	-6.09	-6.09	-6.09	-6.09	-6.09	-6.09	-6.09	-6.09	Day hour	89.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Absorbtive?	no
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	Use hour?	no
LEQ	61.72	53.84	60.90	60.43	46.06	53.12	54.37	55.26	62.33	GRADE dB	0.00

DAY LEQ 64.71 EVENING LEQ 61.30 NIGHT LEQ 63.65

CNEL 70.30

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Riverside County Published Mix

Larger than Secondary

Future Traffic Noise - Heavy Mix

6th Avenue

21825.00

	DAYTIME			EVENING			NIGHTTIME				
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	ADT	17400.00
										SPEED	40.00
										DISTANCE	80.00
INPUT PARAMETERS											
Vehicles per hour	1007.70	20.88	34.80	748.11	3.48	5.80	185.51	29.00	48.33	% A	92.00
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	% MT	3.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	% HT	5.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	LEFT	-90.00
										RIGHT	90.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	CNEL	72.53
ADJUSTMENTS										DAY LEQ	66.95
Flow	23.71	6.87	9.09	22.41	-0.91	1.31	16.36	8.30	10.52		
Distance	-2.11	-2.11	-2.11	-2.11	-2.11	-2.11	-2.11	-2.11	-2.11	Day hour	89.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Absorbtive?	no
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	Use hour?	no
LEQ	63.96	56.07	63.14	62.66	48.29	55.36	56.61	57.50	64.56	GRADE dB	0.00

DAY LEQ 66.95 EVENING LEQ 63.53 NIGHT LEQ 65.89

CNEL 72.53

APPENDIX F

SOUNDPLAN WORKSHEETS

Noise emissions of industry sources

Source name	Referen	Level		Frequency spectrum [dB(A)]																											Correctio		
				31	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1	1.3	1.6	2	2.5	3.2	4	5	6.3	8	10	12.5	16	Cwa	CI	CT
			dB(A	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	dB	dB	dB
Vacuum 1	Lw/	Day	85.9																													-	-	-
		Nigh	30.0																													-	-	-
Car Wash Drying	Lw/	Day	107.																													-	-	-
		Nigh	45.0																													-	-	-
HVAC 1	Lw/	Day	107.	39.9	46.	62.	69.	65.	77.	81.	81.	84.	85.	88.	91.	93.	99.	101	97.	98.	96.	91.	90.	86.	87.	86.	87.	84.	79.	78.	73.	-	-	-
		Nigh	45.0	-22	-15	0.2	7.3	3.1	15.	19.	19.	22.	23.	26.	29.	31.	37.	39.4	35.	36.	34.	29.	28.	24.	25.	24.	25.	22.	17.	16.	11.	-	-	-
HVAC 4	Lw/	Day	107.	39.9	46.	62.	69.	65.	77.	81.	81.	84.	85.	88.	91.	93.	99.	101	97.	98.	96.	91.	90.	86.	87.	86.	87.	84.	79.	78.	73.	-	-	-
		Nigh	45.0	-22	-15	0.2	7.3	3.1	15.	19.	19.	22.	23.	26.	29.	31.	37.	39.4	35.	36.	34.	29.	28.	24.	25.	24.	25.	22.	17.	16.	11.	-	-	-
HVAC 5	Lw/	Day	107.	39.9	46.	62.	69.	65.	77.	81.	81.	84.	85.	88.	91.	93.	99.	101	97.	98.	96.	91.	90.	86.	87.	86.	87.	84.	79.	78.	73.	-	-	-
		Nigh	45.0	-22	-15	0.2	7.3	3.1	15.	19.	19.	22.	23.	26.	29.	31.	37.	39.4	35.	36.	34.	29.	28.	24.	25.	24.	25.	22.	17.	16.	11.	-	-	-
HVAC 6	Lw/	Day	107.	39.9	46.	62.	69.	65.	77.	81.	81.	84.	85.	88.	91.	93.	99.	101	97.	98.	96.	91.	90.	86.	87.	86.	87.	84.	79.	78.	73.	-	-	-
		Nigh	45.0	-22	-15	0.2	7.3	3.1	15.	19.	19.	22.	23.	26.	29.	31.	37.	39.4	35.	36.	34.	29.	28.	24.	25.	24.	25.	22.	17.	16.	11.	-	-	-
HVAC 7	Lw/	Day	107.	39.9	46.	62.	69.	65.	77.	81.	81.	84.	85.	88.	91.	93.	99.	101	97.	98.	96.	91.	90.	86.	87.	86.	87.	84.	79.	78.	73.	-	-	-
		Nigh	45.0	-22	-15	0.2	7.3	3.1	15.	19.	19.	22.	23.	26.	29.	31.	37.	39.4	35.	36.	34.	29.	28.	24.	25.	24.	25.	22.	17.	16.	11.	-	-	-
HVAC 8	Lw/	Day	107.	39.9	46.	62.	69.	65.	77.	81.	81.	84.	85.	88.	91.	93.	99.	101	97.	98.	96.	91.	90.	86.	87.	86.	87.	84.	79.	78.	73.	-	-	-
		Nigh	45.0	-22	-15	0.2	7.3	3.1	15.	19.	19.	22.	23.	26.	29.	31.	37.	39.4	35.	36.	34.	29.	28.	24.	25.	24.	25.	22.	17.	16.	11.	-	-	-
Vacuum 2	Lw/	Day	85.9																													-	-	-
		Nigh	30.0																													-	-	-
Fueling Area	Lw/m²	Day	65.0	-	-	-	-	-	-	-	-	-	-	-	-	65.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Nigh	30.0	-	-	-	-	-	-	-	-	-	-	-	-	30.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Noise emissions of parking lot traffic

Name	Parking lot type	Size	Movements per hour		Road surface	Separated method	Lw,ref
			Day	Night			dB(A)
Parking Lot 1	P+R, near town	16 Parking bays	3.100	3.100	Asphaltic driving lanes	no	77.2
Parking Lot 2	P+R, near town	11 Parking bays	3.100	3.100	Asphaltic driving lanes	no	74.2

Contribution levels of the receivers

Source name				Level Day	Level Night
				dB(A)	
1	GF	45.5	33.7		
Car Wash Drying System				44.5	-17.5
Fueling Area				13.4	-21.6
HVAC 1				12.6	-49.4
HVAC 4				13.9	-48.1
HVAC 5				11.2	-50.8
HVAC 6				12.3	-49.7
HVAC 7				9.8	-52.2
HVAC 8				10.8	-51.2
Parking Lot 1				33.5	33.5
Parking Lot 2				20.8	20.8
Vacuum 1				33.8	-22.1
Vacuum 2				33.6	-22.3
2	GF	53.0	36.4		
Car Wash Drying System				52.8	-9.2
Fueling Area				11.5	-23.5
HVAC 1				7.4	-54.6
HVAC 4				5.9	-56.1
HVAC 5				10.3	-51.7
HVAC 6				7.0	-55.0
HVAC 7				9.8	-52.2
HVAC 8				6.4	-55.6
Parking Lot 1				35.0	35.0
Parking Lot 2				30.7	30.7
Vacuum 1				34.7	-21.2
Vacuum 2				34.5	-21.4
3	GF	52.5	37.9		
Car Wash Drying System				52.2	-9.8
Fueling Area				12.7	-22.3
HVAC 1				10.6	-51.4
HVAC 4				7.4	-54.6
HVAC 5				10.9	-51.1
HVAC 6				7.7	-54.3
HVAC 7				11.2	-50.8
HVAC 8				7.9	-54.1
Parking Lot 1				36.6	36.6
Parking Lot 2				32.0	32.0
Vacuum 1				33.8	-22.1
Vacuum 2				34.0	-21.9
4	GF	50.9	35.6		
Car Wash Drying System				50.7	-11.3
Fueling Area				10.5	-24.5
HVAC 1				7.3	-54.7
HVAC 4				5.5	-56.5
HVAC 5				8.2	-53.8
HVAC 6				6.3	-55.7
HVAC 7				11.5	-50.5
HVAC 8				11.2	-50.8
Parking Lot 1				33.8	33.8
Parking Lot 2				30.9	30.9
Vacuum 1				30.3	-25.6
Vacuum 2				30.5	-25.4
5	GF	50.0	41.7		
Car Wash Drying System				48.9	-13.1
Fueling Area				17.6	-17.4
HVAC 1				12.4	-49.6
HVAC 4				10.5	-51.5
HVAC 5				13.8	-48.2
HVAC 6				13.0	-49.0
HVAC 7				17.1	-44.9
HVAC 8				16.6	-45.4
Parking Lot 1				39.2	39.2

Contribution levels of the receivers

Source name				Level Day	Level Night
				dB(A)	
Parking Lot 2				38.2	38.2
Vacuum 1				35.0	-20.9
Vacuum 2				35.3	-20.6
6	GF	63.5	28.7		
Car Wash Drying System				63.5	1.5
Fueling Area				9.0	-26.0
HVAC 1				15.9	-46.1
HVAC 4				21.8	-40.2
HVAC 5				14.4	-47.6
HVAC 6				19.8	-42.2
HVAC 7				13.0	-49.0
HVAC 8				17.6	-44.4
Parking Lot 1				27.2	27.2
Parking Lot 2				23.5	23.5
Vacuum 1				34.7	-21.2
Vacuum 2				34.7	-21.2
7	GF	57.5	43.7		
Car Wash Drying System				56.9	-5.1
Fueling Area				18.5	-16.5
HVAC 1				14.4	-47.6
HVAC 4				10.2	-51.8
HVAC 5				14.3	-47.7
HVAC 6				10.2	-51.8
HVAC 7				14.1	-47.9
HVAC 8				10.0	-52.0
Parking Lot 1				43.0	43.0
Parking Lot 2				35.6	35.6
Vacuum 1				43.6	-12.3
Vacuum 2				43.7	-12.2
8	GF	54.1	40.1		
Car Wash Drying System				53.8	-8.2
Fueling Area				15.0	-20.0
HVAC 1				12.0	-50.0
HVAC 4				8.6	-53.4
HVAC 5				12.2	-49.8
HVAC 6				8.8	-53.2
HVAC 7				12.3	-49.7
HVAC 8				8.8	-53.2
Parking Lot 1				39.0	39.0
Parking Lot 2				33.7	33.7
Vacuum 1				36.7	-19.2
Vacuum 2				36.9	-19.0
9	GF	52.6	37.8		
Car Wash Drying System				52.3	-9.7
Fueling Area				12.7	-22.3
HVAC 1				10.8	-51.2
HVAC 4				7.1	-54.9
HVAC 5				11.3	-50.7
HVAC 6				7.6	-54.4
HVAC 7				11.8	-50.2
HVAC 8				8.2	-53.8
Parking Lot 1				36.4	36.4
Parking Lot 2				32.0	32.0
Vacuum 1				33.2	-22.7
Vacuum 2				33.5	-22.4
10	GF	51.8	30.5		
Car Wash Drying System				51.6	-10.4
Fueling Area				11.1	-23.9
HVAC 1				16.6	-45.4
HVAC 4				17.5	-44.5
HVAC 5				13.2	-48.8
HVAC 6				16.9	-45.1

Contribution levels of the receivers

Source name	Level Day	Level Night
	dB(A)	
HVAC 7	11.7	-50.3
HVAC 8	15.3	-46.7
Parking Lot 1	30.0	30.0
Parking Lot 2	21.1	21.1
Vacuum 1	34.1	-21.8
Vacuum 2	34.0	-21.9
11 GF 62.4 28.5		
Car Wash Drying System	62.4	0.4
Fueling Area	7.1	-27.9
HVAC 1	16.4	-45.6
HVAC 4	18.6	-43.4
HVAC 5	15.4	-46.6
HVAC 6	17.4	-44.6
HVAC 7	14.4	-47.6
HVAC 8	15.8	-46.2
Parking Lot 1	27.7	27.7
Parking Lot 2	20.8	20.8
Vacuum 1	27.7	-28.2
Vacuum 2	27.6	-28.3

Receiver list

No.	Receiver name	Building side	Floor	Limit Day	Limit Night	Level Day	Level Night	Conflict Day	Conflict Night
				dB(A)		dB(A)		dB	
1	1	-	GF	-	-	45.5	33.7	-	-
2	2	-	GF	-	-	53.0	36.4	-	-
3	3	-	GF	-	-	52.5	37.9	-	-
4	4	-	GF	-	-	50.9	35.6	-	-
5	5	-	GF	-	-	50.0	41.7	-	-
6	6	-	GF	-	-	63.5	28.7	-	-
7	7	-	GF	-	-	57.5	43.7	-	-
8	8	-	GF	-	-	54.1	40.1	-	-
9	9	-	GF	-	-	52.6	37.8	-	-
10	10	-	GF	-	-	51.8	30.5	-	-
11	11	-	GF	-	-	62.4	28.5	-	-

Calculated Sound Levels at Typical Distances

1) All calculations based on data obtained from testing on standard 9200, 9210, and 9213 vac models with metal domes to assume a worst case scenario.

2) Calculations assume an open field condition on a reflective surface (i.e. concrete). Nearby reflective surfaces such as walls may affect actual sound levels.

3) Data is to be used as an approximation only. Actual sound levels may vary based on environmental and site-related conditions.

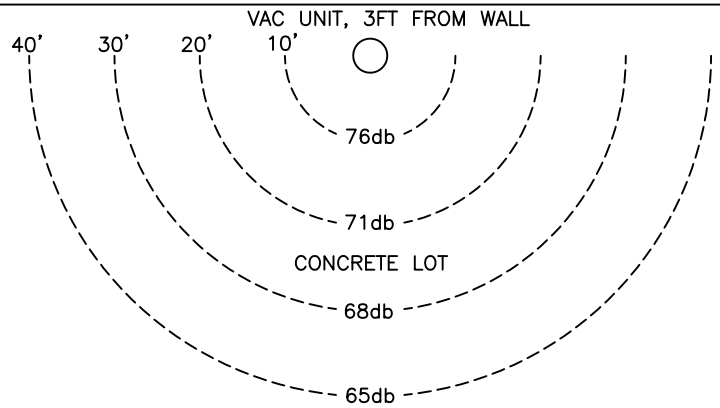
2 Motor Vac - Small Dome															
Wide Open With Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	76.4	70.4	66.9	64.4	62.4	60.9	59.5	58.4	57.3	56.4	55.6	54.8	54.1	53.5	52.9
Sealed Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	80.5	74.5	71.0	68.5	66.5	64.9	63.6	62.4	61.4	60.5	59.7	58.9	58.2	57.6	57.0
Attachment Removed	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	74.5	68.5	65.0	62.5	60.6	59.0	57.6	56.5	55.4	54.5	53.7	52.9	52.3	51.6	51.0

2 Motor Vac - Large Dome															
Wide Open With Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	78.2	72.2	68.7	66.2	64.3	62.7	61.3	60.2	59.1	58.2	57.4	56.6	56.0	55.3	54.7
Sealed Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	84.2	78.1	74.6	72.1	70.2	68.6	67.2	66.1	65.1	64.2	63.3	62.6	61.9	61.2	60.6
Attachment Removed	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	78.3	72.3	68.8	66.3	64.3	62.7	61.4	60.2	59.2	58.3	57.5	56.7	56.0	55.4	54.8

3 Motor Vac - Large Dome															
Wide Open With Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	81.3	75.3	71.8	69.3	67.3	65.7	64.4	63.2	62.2	61.3	60.5	59.7	59.0	58.4	57.8
Sealed Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	85.9	79.9	76.3	73.8	71.9	70.3	69.0	67.8	66.8	65.9	65.1	64.3	63.6	63.0	62.4
Attachment Removed	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	79.6	73.6	70.1	67.6	65.6	64.0	62.7	61.5	60.5	59.6	58.8	58.0	57.3	56.7	56.1

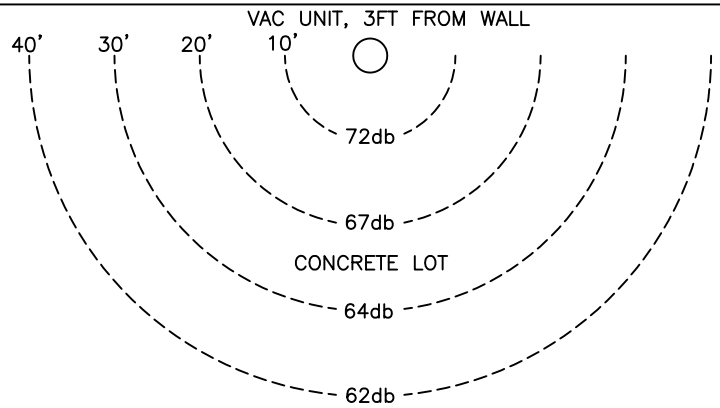
Dual Vac, Both Sides In Operation (Approximate - Derived From 2 Motor Large Dome Data)															
Wide Open With Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	81.2	75.2	71.7	69.2	67.3	65.7	64.3	63.2	62.1	61.2	60.4	59.6	59.0	58.3	57.7
Sealed Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	87.2	81.1	77.6	75.1	73.2	71.6	70.2	69.1	68.1	67.2	66.3	65.6	64.9	64.2	63.6
Attachment Removed	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	81.3	75.3	71.8	69.3	67.3	65.7	64.4	63.2	62.2	61.3	60.5	59.7	59.0	58.4	57.8

STEEL WALL, 18FT HIGH, 150FT LONG



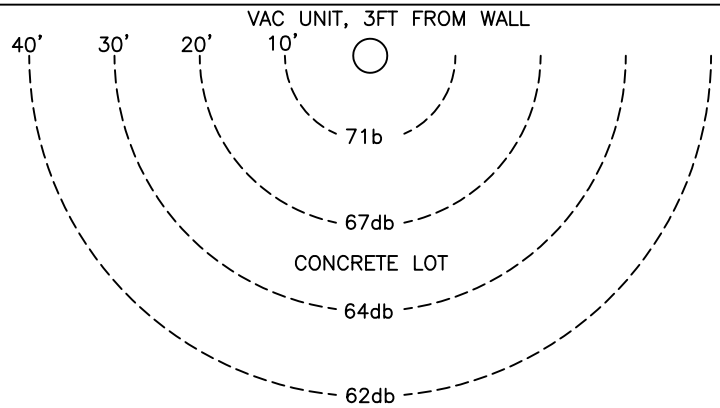
REGULAR VAC MOTOR (2)
PLASTIC DOME

STEEL WALL, 18FT HIGH, 150FT LONG



REGULAR VAC MOTOR (2)
STEEL INSULATED DOME

STEEL WALL, 18FT HIGH, 150FT LONG



QUIET VAC MOTOR (2)
STEEL INSULATED DOME

SOUND LEVEL METER READINGS

MODEL: FT-DD-T460HP4 (60HP TURBINE VACUUM PRODUCER)

READING ONE: 69 DB-A, 10 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING TWO: 54 DB-A, 20 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING THREE: 38 DB-A, 30 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

SOUND LEVEL METER USED:

SIMPSON MODEL #40003 – MSHA APPROVED.
MEETS OSHA & WALSH-HEALY REQUIREMENTS FOR NOISE CONTROL.
CONFORMS TO ANSI S1.4-1983, IEC 651 SPECS FOR METER TYPE.

NOTE: THESE READINGS WERE TAKEN OUTSIDE OF 8'x10'x8' CINDER BLOCK ENCLOSURE WITH CONCRETE SLAB AND WOOD JOIST ROOF.

Vacutech
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WEB SITE: vacutechllc.com

Calculated Sound Levels at Typical Distances

1) All calculations based on data obtained from testing on standard 9200, 9210, and 9213 vac models with metal domes to assume a worst case scenario.

2) Calculations assume an open field condition on a reflective surface (i.e. concrete). Nearby reflective surfaces such as walls may affect actual sound levels.

3) Data is to be used as an approximation only. Actual sound levels may vary based on environmental and site-related conditions.

2 Motor Vac - Small Dome															
Wide Open With Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	76.4	70.4	66.9	64.4	62.4	60.9	59.5	58.4	57.3	56.4	55.6	54.8	54.1	53.5	52.9
Sealed Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	80.5	74.5	71.0	68.5	66.5	64.9	63.6	62.4	61.4	60.5	59.7	58.9	58.2	57.6	57.0
Attachment Removed	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	74.5	68.5	65.0	62.5	60.6	59.0	57.6	56.5	55.4	54.5	53.7	52.9	52.3	51.6	51.0

2 Motor Vac - Large Dome															
Wide Open With Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	78.2	72.2	68.7	66.2	64.3	62.7	61.3	60.2	59.1	58.2	57.4	56.6	56.0	55.3	54.7
Sealed Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	84.2	78.1	74.6	72.1	70.2	68.6	67.2	66.1	65.1	64.2	63.3	62.6	61.9	61.2	60.6
Attachment Removed	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	78.3	72.3	68.8	66.3	64.3	62.7	61.4	60.2	59.2	58.3	57.5	56.7	56.0	55.4	54.8

3 Motor Vac - Large Dome															
Wide Open With Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	81.3	75.3	71.8	69.3	67.3	65.7	64.4	63.2	62.2	61.3	60.5	59.7	59.0	58.4	57.8
Sealed Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	85.9	79.9	76.3	73.8	71.9	70.3	69.0	67.8	66.8	65.9	65.1	64.3	63.6	63.0	62.4
Attachment Removed	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	79.6	73.6	70.1	67.6	65.6	64.0	62.7	61.5	60.5	59.6	58.8	58.0	57.3	56.7	56.1

Dual Vac, Both Sides In Operation (Approximate - Derived From 2 Motor Large Dome Data)															
Wide Open With Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	81.2	75.2	71.7	69.2	67.3	65.7	64.3	63.2	62.1	61.2	60.4	59.6	59.0	58.3	57.7
Sealed Attachment	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	87.2	81.1	77.6	75.1	73.2	71.6	70.2	69.1	68.1	67.2	66.3	65.6	64.9	64.2	63.6
Attachment Removed	Distance From Vac in Feet														
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)	81.3	75.3	71.8	69.3	67.3	65.7	64.4	63.2	62.2	61.3	60.5	59.7	59.0	58.4	57.8

PWL =	90	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		72.5	66.5	63	60.5	58.5	56.9	55.6	54.4	53.4	52.5	51.7	50.9	50.2	49.6	49
PWL =	91	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		73.5	67.5	64	61.5	59.5	57.9	56.6	55.4	54.4	53.5	52.7	51.9	51.2	50.6	50
PWL =	92	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		74.5	68.5	65	62.5	60.5	58.9	57.6	56.4	55.4	54.5	53.7	52.9	52.2	51.6	51
PWL =	93	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		75.5	69.5	66	63.5	61.5	59.9	58.6	57.4	56.4	55.5	54.7	53.9	53.2	52.6	52
PWL =	94	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		76.5	70.5	67	64.5	62.5	60.9	59.6	58.4	57.4	56.5	55.7	54.9	54.2	53.6	53
PWL =	95	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		77.5	71.5	68	65.5	63.5	61.9	60.6	59.4	58.4	57.5	56.7	55.9	55.2	54.6	54
PWL =	96	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		78.5	72.5	69	66.5	64.5	62.9	61.6	60.4	59.4	58.5	57.7	56.9	56.2	55.6	55
PWL =	97	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		79.5	73.5	70	67.5	65.5	63.9	62.6	61.4	60.4	59.5	58.7	57.9	57.2	56.6	56
PWL =	98	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		80.5	74.5	71	68.5	66.5	64.9	63.6	62.4	61.4	60.5	59.7	58.9	58.2	57.6	57
PWL =	99	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		81.5	75.5	72	69.5	67.5	65.9	64.6	63.4	62.4	61.5	60.7	59.9	59.2	58.6	58
PWL =	100	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		82.5	76.5	73	70.5	68.5	66.9	65.6	64.4	63.4	62.5	61.7	60.9	60.2	59.6	59
PWL =	101	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		83.5	77.5	74	71.5	69.5	67.9	66.6	65.4	64.4	63.5	62.7	61.9	61.2	60.6	60
PWL =	102	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		84.5	78.5	75	72.5	70.5	68.9	67.6	66.4	65.4	64.5	63.7	62.9	62.2	61.6	61
PWL =	103	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		85.5	79.5	76	73.5	71.5	69.9	68.6	67.4	66.4	65.5	64.7	63.9	63.2	62.6	62
PWL =	104	Distance from source (ft)														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Sound Level (dB)		86.5	80.5	77	74.5	72.5	70.9	69.6	68.4	67.4	66.5	65.7	64.9	64.2	63.6	63

DATA SUMMARY: J.E. Adams Vacs with 119414-00 Ametek motors	Model 9200		Model 9210		Model 9213
	SOUND POWER dB(a)				
Vac centered in test chamber. Inlet and exhaust in the test chamber	Overall PWL		Overall PWL		Overall PWL
Wide open with attachment	93.92		95.73		98.80
Sealed attachment	98.00		101.65		103.39
Attachment removed	92.03		95.80		97.11
Vac centered in test chamber. Inlet outside and exhaust in the test					
Wide open with attachment	91.96		95.42		98.18
Sealed attachment	97.40		101.35		103.05
Attachment removed	92.05		95.57		97.25

CUSTOM CALCULATIONS - SOUND LEVEL vs. DISTANCE					
Enter PWL in dB(a) =	103		SOUND LEVEL	=	60.6 dB
Enter Distance in ft. =	175				

All sound measurements below were taken with a VLIKE Model - VL6708 digital sound level meter.
Settings were as follows: 40 ~ 90 dB range, "A" weighting mode, FAST (High Speed) mode

Sound Data
4 Sons No. 509 Chevron Express Wash
1446 E. Chandler Blvd. Phoenix, AZ 85048

	30'	20'	10'
Ambiant	56	55.6	55.4
Dryers	76.2	78.4	82.6

DRYERS
QTY-8 MACNEIL TECH 21 15HP DRYERS

Tunnel Exit

Ambiant	64.5	0'
Dryers	94.2	

Ambiant	59.2	10'
Dryers	90.5	

Ambiant	58.1	20'
Dryers	88.1	

Ambiant	55.5	30'
Dryers	86.4	

Sound Data
Scrub Bot Express Wash
3965 W. Ray Rd. Chandler Az. 85226

QTY-2 AUTOVAC 20HP PRODUCERS

Ambient 71

VACUUMS at PRODUCER

Door Closed	88	0'
Door Open	91.7	

Door Closed	77.8	10'
Door Open	86.7	

Door Closed	76.3	20'
Door Open	78.4	

Door Closed	76.3	30'
Door Open	75.6	

DRYERS
QTY-12 MACNEIL TECH 21 15HP DRYERS

At Dryer	
Ambiant	67.5
Dryers On	101.8

Qty -12 MacNeil Tech-21 15HP Dryers

DRY N SHINE

Inside 97.2

Ambiant	78.9	0'
Dryers	93.1	

Ambiant	74.5	10'
Dryers	85.3	

Ambiant	70.8	20'
Dryers	79.1	

Ambiant	65.7	30'
Dryers	76	

VACUUMS
QTY - 2 AUTOVAC 20HP PRODUCERS

	Holstered	In Use	
Claw	75	97	0'
Crevis tool	76	106	

	Holstered	In Use	
Claw	71	76.2	10'
Crevis tool	71	78.5	

	Holstered	In Use	
Claw	71	72.3	20'
Crevis tool	71	72.3	

	Holstered	In Use	
Claw	71	71.4	30'
Crevis tool	71	71.4	

Air Nozzle

Ambiant	75	0'
In Use	113	

Ambiant	71	10'
In Use	94.1	

Ambiant	71	20'
In Use	86	

Ambiant	71	30'
In Use	83	

Sound Data
4 Sons No. 201 Chevron Express Wash
2905 S. 99th Ave. Tolleson, AZ. 85353

Ambiant 62

QTY - 1 Vacutech 30HP Producer
VACUUMS at PRODUCER

Door Closed	76.7	0'
Door Open	85.2	

Door Closed	72.6	10'
Door Open	79.2	

Door Closed	71.1	20'
Door Open	75.6	

Door Closed	67	30'
Door Open	73.5	

VACUUMS

	Holstered	In Use	
Claw	75	92	0'
Crevis tool	NA	NA	

	Holstered	In Use	
Claw	68.5	74.3	10'
Crevis tool	NA	NA	

	Holstered	In Use	
Claw	62.7	67.8	20'
Crevis tool	NA	NA	

	Holstered	In Use	
Claw	62.4	63.6	30'
Crevis tool	NA	NA	

Air Nozzle

Ambiant	75	0'
In Use	108	

Ambiant	71	10'
In Use	92.6	

Ambiant	62.7	20'
In Use	85	

Ambiant	62.4	30'
In Use	83	

APPENDIX G

VIBRATION WORKSHEETS

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19268 6th at Pennyslvania Beyond Food Mart	Date:	6/15/20
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to West		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment Type =	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	55.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.027	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19268 6th at Pennyslvania Beyond Food Mart	Date:	6/15/20
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Commercial to West		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	55.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.064	IN/SEC	OUTPUT IN BLUE

GANDDINI GROUP, INC.
550 Parkcenter Drive, Suite 202, Santa Ana, CA 92705
714.795.3100 | www.ganddini.com

APPENDIX I
TRAFFIC IMPACT ANALYSIS
AUGUST 25, 2020

BEYOND FOOD MART AT JACKSON AVENUE PROJECT TRAFFIC IMPACT ANALYSIS

City of Murrieta

August 25, 2020

prepared by

Perrie Ilercil, P.E. (AZ)
Giancarlo Ganddini, PE, PTP

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550 Parkcenter Drive, Suite 202
Santa Ana, California 92705
714.795.3100 | ganddini.com

19281

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EXECUTIVE SUMMARY

The purpose of this traffic impact analysis is to provide an assessment of traffic operations resulting from development of the proposed Beyond Food Mart at Jackson Avenue Project and to identify measures necessary to mitigate potentially significant traffic impacts. The traffic issues related to the proposed land use and development have been evaluated in the context of the California Environmental Quality Act (CEQA) and City of Murrieta requirements for evaluation of local operations. The City of Murrieta is the lead agency responsible for evaluation of potential environmental impacts associated with the proposed project. This report analyzes traffic impacts for the anticipated project opening year in 2022.

Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with technical terms related to transportation engineering.

Project Description

The project site is located at the northeast corner of Jackson Avenue and Murrieta Hot Springs Road in the City of Murrieta. The project site is currently zoned for neighborhood commercial land use. The project site is currently undeveloped and vacant. The proposed project consists of developing the project site with a 7,250 square foot super convenience store/gas station with drive through window, 20 vehicle fueling positions, and an 1,800 square foot automated car wash.

The proposed project will provide two access driveways at Murrieta Hot Springs Road. One full access driveway is proposed at the north leg of the Jackson Avenue and Murrieta Hot Springs Road intersection and one right turn in/out only driveway is proposed at the eastern boundary to provide reciprocal access with the easterly adjacent property.

Existing Levels of Service

The study intersections currently operate within acceptable Levels of Service (D or better), except for the following study intersection that currently operates at Level of Service F during the PM peak hour.

- Alta Murrieta Drive at Murrieta Hot Springs Road - #3

The study roadway segment currently operates at Level of Service E.

Project Trip Generation

The proposed project is forecast to generate approximately 3,457 new daily trips, including 281 new trips during the AM peak hour and 229 new trips during the PM peak hour.

Levels of Service Analysis

The proposed project does not exceed the City-established operating requirements for General Plan consistency at the study intersections for Baseline Year (2022) Plus Project conditions; therefore, no improvements are required.

The proposed project exceeds the City-established operating requirements for General Plan consistency at the following study intersection for Opening Year (2022) With Project conditions:

- Jackson Avenue at Murrieta Hot Springs Road - #4

The following improvements are recommended for Opening Year (2022) With Project conditions to reduce the project impact to a level that does not exceed the City-established operating requirements for General Plan consistency during the PM peak hour:

- Jackson Avenue (NS) at Murrieta Hot Springs Road (EW) - #4
  - Install eastbound right turn overlap signal phasing.

The proposed project does not exceed the City-established operating requirements for General Plan consistency at the study intersections for Opening Year (2022) With Project conditions with the recommended improvements.

The proposed project does not exceed the City-established operating requirements for General Plan consistency at the study roadway segment for the scenarios evaluated; therefore, no improvements are required for the study roadway segment.

Site Access Improvements

The proposed project shall construct the following improvements to provide project site access:

- Jackson Avenue/Project Driveway (NS) at Murrieta Hot Springs Road (EW) - #4
  - Modify the existing traffic signal, including the addition of new signal heads, to provide split phasing for the north-south direction and protected left-turn phasing for the new eastbound left turn lane.
  - Restripe the northbound number two left turn lane to a shared through/left turn lane.
  - Construct the southbound approach to consist of one shared left/through/right turn lane.
  - Construct a dedicated eastbound left turn lane.
  - Construct a dedicated westbound right turn lane immediately east of the intersection.

- Project East Driveway (NS) at Murrieta Hot Springs Road (EW) - #5
  - Install southbound stop control.
  - Construct the southbound approach to consist of one right turn only lane.

Level of Service Improvements

The following improvements are recommended for Opening Year (2022) With Project conditions to reduce the project impact to a level that does not exceed the City-established operating requirements for General Plan consistency:

- Jackson Avenue (NS) at Murrieta Hot Springs Road (EW) - #4
  - Install eastbound right turn overlap signal phasing.

VMT Analysis

The proposed project satisfies the project type screening criteria for local serving retail and may be presumed to result in a less than significant VMT impact in accordance with VMT guidelines established by the City of Murrieta.

1. INTRODUCTION

This section describes the purpose of this traffic impact analysis, project location, proposed development, and study area. Figure 1 and Figure 2 shows the regional location map and project location map, respectively. Figure 3 illustrates the project site plan.

Purpose and Objectives

The purpose of this traffic impact analysis is to provide an assessment of traffic operations resulting from development of the proposed Beyond Food Mart at Jackson Avenue Project and to identify measures necessary to mitigate potentially significant traffic impact analysis. The traffic issues related to the proposed land use and development have been evaluated in the context of the California Environmental Quality Act (CEQA) and City of Murrieta requirements for evaluation of local operations. The City of Murrieta is the lead agency responsible for evaluation of potential environmental impacts associated with the proposed project. This report analyzes traffic impact analysis for the anticipated project opening year in 2022.

Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with technical terms related to transportation engineering.

Project Description

The project site is located at the northeast corner of Jackson Avenue and Murrieta Hot Springs Road in the City of Murrieta. The project site is currently zoned for neighborhood commercial land use. The project site is currently undeveloped and vacant. The proposed project consists of developing the project site with a 7,250 square foot super convenience store/gas station with drive through window, 20 vehicle fueling positions, and an 1,800 square foot automated car wash.

The proposed project will provide two access driveways at Murrieta Hot Springs Road. One full access driveway is proposed at the north leg of the Jackson Avenue and Murrieta Hot Springs Road intersection and one right turn in/out only driveway is proposed at the eastern boundary to provide reciprocal access with the easterly adjacent property.

Analysis Scenarios

The following scenarios are analyzed during typical weekday AM and PM peak hour conditions:

- Existing
- Baseline Year (2022)
- Baseline Year (2022) Plus Project
- Opening Year (2022) Without Project
- Opening Year (2022) With Project

Study Area

Based on the City-approved scoping agreement (see Appendix B), the study area consists of the following study intersections within City of Murrieta and California Department of Transportation (Caltrans) jurisdictions:

Study Intersections[1]	Jurisdiction
1. I-215 SB Ramps at Murrieta Hot Springs Road	Murrieta / Caltrans
2. I-215 NB Ramps at Murrieta Hot Springs Road	Murrieta / Caltrans
3. Alta Murrieta Drive at Murrieta Hot Springs Road	Murrieta
4. Jackson Avenue at Murrieta Hot Springs Road	Murrieta
5. East Project Driveway at Murrieta Hot Springs Road	Murrieta
6. Whitewood Road at Murrieta Hot Springs Road	Murrieta

Study Roadway Segment	Jurisdiction
1. Murrieta Hot Springs Road between: Jackson Avenue to East Project Driveway	Murrieta

[1] SB = Southbound; NB = Northbound; (NS) = North-South roadway; (EW) = East-West roadway

Figure 1. Regional Location Map

Figure 2. Project Location Map

Figure 3. Site Plan

2. METHODOLOGY

This section describes the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies.

INTERSECTION DELAY METHODOLOGY

Analysis of study area intersections within the City of Murrieta are analyzed using the methodology in accordance with the City's Traffic Impact Analysis Preparation Guidelines (May 2020) ["City of Murrieta TIA Guidelines"].

The technique used to assess the performance of an intersection is known as the intersection delay method based on the procedures contained in the Highway Capacity Manual (Transportation Research Board, 6th Edition). The methodology considers the traffic volume and distribution of movements, traffic composition, geometric characteristics, and signalization details to calculate the average control delay per vehicle and corresponding Level of Service. Control delay is defined as the portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. The intersection control delay is then correlated to Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, Highway Capacity Manual (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). At intersections with traffic signal or all way stop control, Level of Service is determined by the average control delay for the overall intersection. At intersections with cross street stop control (i.e., one- or two-way stop control), Level of Service is determined by the average control delay for the worst individual movement (or movements sharing a single lane). Intersection delay analysis was performed using the Vistro software with default capacity values and adjustment factors recommended in the Highway Capacity Manual.

Signalized intersection input parameters, such as saturation flow rates and default values for Highway Capacity Manual calculations, were used in accordance with the recommended values shown on Exhibit B of City of Murrieta TIA Guidelines.

ROADWAY CAPACITY METHODOLOGY

The technique used to assess the performance of roadway segments is known as the volume to capacity analysis based on the procedures contained in the Highway Capacity Manual. The methodology compares the average daily traffic volume using the roadway segment to the capacity of the roadway segment to calculate the volume-to-capacity (V/C) ratio, which is then correlated to a performance measure known as Level of Service based on the following thresholds:

Level of Service	Volume / Capacity
A	0.000 - 0.600
B	0.601 - 0.700
C	0.701 - 0.800
D	0.801 - 0.900
E	0.901 - 1.000
F	> 1.0

Source: Transportation Research Board, Highway Capacity Manual (6th Edition).

The average daily traffic (ADT) associated with a roadway segment is determined by a number of conditions including roadway classification and the number of traffic lanes. These roadway capacities are theoretical estimates for planning purposes. As such, where roadway segment daily traffic analysis indicates a deficiency, a review of the intersection peak hour analysis and progression analysis are undertaken. Therefore, roadway segment widening is typically only recommended if the peak hour intersection analysis indicates the need for additional through lanes.

Roadway Classification	Number of Lanes	Maximum Two-way Daily Traffic Volume (ADT) Level of Service Capacity E
Collector	2	13,000
Secondary	4	25,900
Major	4	34,100
Arterial	4	35,900
Urban Arterial	6	53,900
Augmented Arterial	8	71,800

Source: City of Murrieta General Plan Update, Transportation Circulation Element (February 2020).

Performance Standards

The City of Murrieta General Plan has established the typical acceptable peak hour Level of Service D for intersections. The City of Murrieta General Plan has established daily Level of Service C for roadway segments, unless the segments are within General Plan Focus Areas where Level of Service D is allowed.

General Plan Consistency/Operating Requirements

The City of Murrieta TIA Guidelines establish the following operating requirements for general plan consistency.

Signalized Intersections

- Any study intersection operating at an acceptable Level of Service (D or better) without project traffic in which the addition of project traffic causes the intersection to degrade to a Level of Service (E or F) shall identify improvements to improve operations to Level of Service (D or better).

- Any signalized study intersection that is operating at unacceptable Level of Service (E or F) without project traffic where the project increases delay by 5.0 or more seconds shall identify improvements to offset the increase in delay.

Unsignalized Intersections

An operational improvement would be required if the study determines that either section a) or both sections b) and c) occur:

a) The addition of project related traffic causes the intersection to degrade from an acceptable Level of Service D or better to Level of Service E or F.

OR

b) The project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at a Level of Service E or F.

AND

c) The intersection meets the peak hour traffic signal warrant after the addition of project traffic.

If the conditions above are satisfied, improvements should be identified that achieve the following:

- LOS D or better for case a) above or to pre-project LOS and delay for case b) above.

Roadway Segments

Based on the City-established performance standards, improvements should be recommended if the project exceeds the following operational goals:

- Any study roadway segment operating at a Level of Service (C or better) without project traffic in which the addition of project traffic causes the segment to degrade to a Level of Service (E or F) should identify improvements to improve operations to Level of Service (C or better).

- As an exception, Level of Service D may be allowed in the North Murrieta Business Corridor, Clinton Keith/Mitchell, Golden Triangle North (Central Murrieta), South Murrieta Business Corridor, or other Focus Areas, or other employment centers.

- Any roadway segment that operates at unacceptable Level of Service (E or F) without project traffic where the project increases traffic in excess of five percent (5%) of the roadway capacity should identify improvements to add capacity to the segment.

3. EXISTING CONDITIONS

This section describes the existing roadway conditions prior to the proposed development, as well as providing agency existing and planned circulation elements. The existing volumes are illustrated on figures contained in this section.

EXISTING ROADWAY SYSTEM

Figure 4 shows the lane geometry and intersection traffic controls for existing conditions based on a field survey of the study area. Regional access to the project site is provided by Interstate 215 approximately three-quarters of a mile to the west. Local north-south circulation is provided by Interstate 215, Alta Murrieta Drive, Jackson Avenue, and Whitewood Road Local east-west circulation is provided by Murrieta Hot Springs Road

Interstate 215 is a six (6) lane divided highway generally trending in a north-south direction in the project vicinity. From its origin at the junction with Interstate 15 in Murrieta to its terminus at the junction with Interstate 15 near Devore Heights, Interstate 215 provides regional access through Riverside County and San Bernardino County. Highway access is provided at grade separated interchanges east and west of the elevated Murrieta Hot Springs Road. It currently carries approximately 97,000 to 110,000 vehicles per day in the project vicinity.

Alta Murrieta Drive is a four (4) lane divided roadway trending in a north-south direction in the project vicinity. Alta Murrieta Drive is classified as a Secondary Arterial (88 feet of right-of-way) in the City of Murrieta General Plan. Bicycle lanes are currently not provided. On-street parking is prohibited in the project vicinity, and a sidewalk is provided along west side of Alta Murrieta Drive.

Jackson Avenue is a is a four (4) lane divided roadway trending in a southwest direction in the project vicinity. Jackson Avenue is a Major Arterial (100 feet of right-of-way) in the City of Murrieta General Plan. Bicycle lanes are currently provided along both sides of roadway south of Murrieta Hot Springs Road. On-street parking is prohibited in the project vicinity, and sidewalks are provided along both sides of Jackson Avenue.

Whitewood Road is a four (4) lane divided roadway north of Murrieta Hot Springs Road and two (2) lane undivided roadway south of Murrieta Hot Springs Road in the project vicinity. Whitewood Road is a Major Arterial (100 feet of right-of-way) in the City of Murrieta General Plan. Bicycle lanes are currently provided along both sides of roadway north of Murrieta Hot Springs Road. On-street parking is prohibited in the project vicinity, and sidewalks are provided along both sides of Whitewood Road.

Murrieta Hot Springs Road is a six-lane divided roadway trending in an east-west direction in the project vicinity. Murrieta Hot Springs Road is classified as a Multi-Modal Transportation Corridor (134 feet of right-of-way) in the City of Murrieta General Plan. Bicycle lanes are currently provided along both sides of roadway east of Jackson Avenue. On-street parking is prohibited in the project vicinity, and sidewalks are provided along both sides of Murrieta Hot Springs Road.

PEDESTRIAN FACILITIES

Existing pedestrian facilities in the project vicinity are shown on Figure 5. As shown on Figure 5, sidewalks are currently provided along the project site frontage.

Transit Facilities

Figure 6 shows the existing Riverside Transit Agency system available in the project vicinity. As shown in Figure 6, the study area is currently served by Routes 23 and 61 which runs along Murrieta Hot Springs Road. A designated bus stop for the westbound direction is located adjacent to the project site at the northeast corner of Jackson Avenue and Murrieta Hot Springs Road intersection.

General Plan Context

Figure 7 shows the City of Murrieta General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The City of Murrieta standard roadway cross-sections are illustrated on Figure 8.

Bicycle Facilities and Pedestrian Trails

The City of Murrieta Bicycle and Pedestrian Trails Master Plan is shown on Figure 9. This figure shows the existing and future bicycle facilities and pedestrian trails. As shown on Figure 9, there are bicycle facilities on both sides of the road east of Jackson Avenue.

Existing Roadway Volumes

Existing peak hour intersection turning movement volumes are based upon AM peak period and PM peak period intersection turning movement counts obtained in November 2017 during typical weekday conditions. The AM peak period was counted between 7:00 AM and 9:00 AM, and the PM peak period was counted between 4:00 PM and 6:00 PM. The actual peak hour within the peak period is the four consecutive 15-minute periods with the highest total volume when all movements are added together. Thus, the PM peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15-minute periods have the highest combined volume. Intersection turning movement count worksheets are provided in Appendix C.

Due to the effect of the COVID-19 pandemic on current traffic patterns, intersection and roadway segment count data from November 2017 was obtained from a previous study for the project site and adjusted by an annual growth rate of two percent (2%) per year over a three-year period for a total growth factor of 1.06 to reflect existing year 2020 conditions. To validate this approach, AM and PM peak hour flow data was compared between November 2017 and January 2020 for I-215 in the project vicinity using the Caltrans PeMS Caltrans Performance Measurement System (PeMS) database. The observed change between November 2017 and January 2020 peak hour flow rates equates to a maximum growth factor of approximately 1.01. Therefore, applying a growth factor adjustment of 1.06 to November 2017 count data provides a conservative analysis.

Additionally, the Clinton Keith Road Extension, which provided an additional east-west connection north of the project site between I-215 and Winchester Road (SR-79), was completed after 2017. Therefore, further adjustments were applied to the 2017 counts to account for diversion of trips from Murrieta Hot Springs Road to Clinton Keith Road associated with the Clinton Keith Extension. Based on traffic volume data from

the Traffic Operations Analysis – 2015 Traffic Update: Clinton Keith Road Extension Project (LSA Associates, Inc., May 2015), it was determined that approximately 25-percent of the traffic volume growth associated with the Clinton Keith Road extension would be diverted trips from Murrieta Hot Springs Road. The eastbound and westbound through traffic on Murrieta Hot Springs was reduced using these values prior to applying the ambient growth. Adjustment calculations for the Clinton Keith Road extension are provided in Appendix D.

Figure 10 shows the existing (year 2020) average daily traffic volumes. The existing average daily traffic volumes have been obtained from the 2018 Traffic Volumes on California State Highways by the California Department of Transportation, and factored from peak hour intersection turning movement volumes at locations where existing data was not available using the following formula for each intersection leg:

PM Peak Hour (Approach Volume + Exit Volume) x 13.1 = Leg Volume.

The peak hour to daily volume conversion factor was derived based on the average peak hour to daily calculated from the sample count locations.

Figure 11, and Figure 12 show the existing (year 2020) AM and PM peak hour intersection turning movement volumes, respectively.

Existing Intersection Level of Service

The study intersection Levels of Service for Existing (Year 2020) conditions have been calculated and are shown in Table 1. Existing Level of Service worksheets are provided in Appendix E.

As shown in Table 1, the study intersections currently operate within acceptable Levels of Service (D or better) for City of Murrieta intersections; except for the following study intersection that is projected to operate at unacceptable Level of Service F during the PM peak hour (see Table 1):

- Alta Murrieta Drive at Murrieta Hot Springs Road - #3

Existing Roadway Capacity Analysis

The study roadway segment volume to capacity and Level of Service has been calculated and is shown in Table 2. As shown in Table 2, the study roadway segment is projected to operate at unacceptable Level of Service E for existing conditions.

Table 1. Existing Intersection Levels of Service

Table 2. Existing Roadway Segment Daily Capacity Analysis

Figure 4. Existing Lane Geometry and Intersection Traffic Controls

Figure 5. Existing Pedestrian Facilities

Figure 6. City of Murrieta Transit Routes

Figure 7. City of Murrieta General Plan Circulation Element

Figure 8. City of Murrieta General Plan Roadway Cross-Sections

Figure 9. City of Murrieta Bicycle Facilities and Pedestrian Trails Master Plan

Figure 10. Existing Average Daily Traffic Volumes

Figure 11. Existing AM Peak Hour Intersection Turning Movement Volumes

Figure 12. Existing PM Peak Hour Intersection Turning Movement Volumes

4. PROJECT TRIP FORECASTS

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated on figures contained in this section.

PROJECT TRIP GENERATION

Table 3 shows the existing, proposed, and net project site trip generation.

The proposed project trip generation is based upon trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017). Based on the proposed project description, ITE Land Use Code 960 - Super Convenience Store with Gas Pumps was determined to most closely represent the proposed project and the weekday daily, AM peak hour, and PM peak hour trip generation rates and directional distributions were selected for this analysis. The number of trips forecast to be generated by the proposed use are determined by multiplying the trip generation rates and directional distribution by the land use quantity.

As shown in Table 3, the proposed project is forecast to generate approximately 3,457 new daily trips, including 281 new trips during the AM peak hour and 229 new trips during the PM peak hour.

Pass-By Trip Adjustment

The project trip generation shown in Table 3 includes applicable pass-by trip adjustments in accordance with procedures outlined in the ITE Trip Generation Handbook (3rd Edition, 2017). Land uses such as shopping gasoline stations and convenience stores will often locate next to busy roadways to attract motorists already on the street. For example, if a customer visits the gas station on the way home from work, one pass-by trip occurs as the vehicle enters the project site driveway and one pass-by trip occurs as the vehicle exits the project site driveway. Since the vehicle is already using the street system to travel home from work, no new trips would be added to the street system as a result of the new gas station, except at the project site driveway(s). Since the trip generation rates contained in the Trip Generation Manual represent vehicles entering and exiting the project site driveways, it is appropriate to adjust the initial trip generation forecast by the number of pass-by trips when calculating the net new trips that are added to the surrounding street system by the proposed project. The pass-by trip reduction was not applied at the project site driveways/immediately adjacent intersection of Jackson Avenue/Murrieta Hot Springs Road.

PROJECT TRIP DISTRIBUTION & ASSIGNMENT

Figure 13 and Figure 14 show the forecast outbound and inbound directional distribution patterns for the project generated trips, respectively. The project trip distribution patterns were determined in consultation with City staff based on review of existing traffic data, surrounding land uses, and the local and regional roadway facilities in the project vicinity.

Based on the identified project trip generation and distributions, project weekday average daily traffic volumes have been calculated and are shown on Figure 15. Project-generated weekday AM peak hour, and PM peak hour intersection turning movement volumes are shown on Figure 16, and Figure 17, respectively.

Table 3. Project Trip Generation

Figure 13. Project Trip Distribution (Outbound)

Figure 14. Project Trip Distribution (Inbound)

Figure 15. Project Average Daily Traffic Volumes

Figure 16. Project AM Peak Hour Intersection Turning Movement Volumes

Figure 17. Project PM Peak Hour Intersection Turning Movement Volumes

5. FUTURE VOLUME FORECASTS

This section describes and illustrates the future volume forecasts for each analysis scenario.

METHOD OF PROJECTION

To assess future conditions, existing roadway volumes are combined with project trips, ambient growth, and other development trips. The project completion year for analysis purposes in this report is 2022.

Regional Ambient Growth

In accordance with the City-approved scoping agreement, existing year 2020 roadway volumes were increased by two percent (2%) per year over a two (2) year period to account for ambient growth on roadways. This is a conservative assumption since the ambient growth was applied to all movements at the study intersections.

Other Developments

To account for growth associated with other development projects, trips generated by other pending or approved but unconstructed developments in the City of Murrieta were reviewed and added to the study area as appropriate. The other development trip generation summary is shown in Table 4. The regional ambient growth is assumed to account for any additional trips generated by other developments not specifically listed in Table 4. Figure 18 shows the other development location map.

Average daily traffic volumes generated by other developments are shown on Figure 19. Figure 20 and Figure 21 show the forecast AM peak hour, and PM peak hour intersection turning movement volumes for trips generated by other developments.

FUTURE VOLUMES

Baseline Year (2022)

The Baseline Year (2022) volume forecast was developed by applying the ambient growth factor to existing (year 2020) volumes. Baseline Year (2022) average daily traffic volumes are shown on Figure 22. Baseline Year (2022) AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 23 and Figure 24.

Baseline Year (2022) Plus Project

The Baseline Year (2022) Plus Project volume forecast was developed by adding project-generated trips to the Baseline Year (2022) scenario. Baseline Year (2022) Plus Project average daily traffic volumes are shown on Figure 25. Baseline Year (2022) Plus Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 26 and Figure 27.

Opening Year (2022) Without Project

The Opening Year (2022) Without Project volume forecast was developed by applying the ambient growth factor to existing (year 2020) volumes and adding trips generated by other developments. Opening Year (2022) Without Project average daily traffic volumes are shown on Figure 28. Opening Year (2022) Without Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 29 and Figure 30.

Opening Year (2022) With Project

The Opening Year (2022) With Project volume forecast was developed by adding project-generated trips to the Opening Year (2022) Without Project scenario. Opening Year (2022) With Project average daily traffic volumes are shown on Figure 31. Opening Year (2022) With Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 32 and Figure 33.

Table 4. Other Development Trip Generation

Table 3 (2 of 2)

Figure 18. Other Development Location Map

Figure 19. Other Development Average Daily Traffic Volumes

Figure 20. Other Development AM Peak Hour Intersection Turning Movement Volumes

Figure 21. Other Development PM Peak Hour Intersection Turning Movement Volumes

Figure 22. Baseline Year (2022) Average Daily Traffic Volumes

Figure 23. Baseline Year (2022) AM Peak Hour Intersection Turning Movement Volumes

Figure 24. Baseline Year (2022) PM Peak Hour Intersection Turning Movement Volumes

Figure 25. Baseline Year (2022) Plus Project Average Daily Traffic Volumes

Figure 26. Baseline Year (2022) Plus Project AM Peak Hour Intersection Turning Movement Volumes

Figure 27. Baseline Year (2022) Plus Project PM Peak Hour Intersection Turning Movement Volumes

Figure 28. Opening Year (2022) Without Project Average Daily Traffic Volumes

Figure 29. Opening Year (2022) Without Project AM Peak Hour Intersection Turning Movement Volumes

Figure 30. Opening Year (2022) Without Project PM Peak Hour Intersection Turning Movement Volumes

Figure 31. Opening Year (2022) With Project Average Daily Traffic Volumes

Figure 32. Opening Year (2022) With Project AM Peak Hour Intersection Turning Movement Volumes

Figure 33. Opening Year (2022) With Project PM Peak Hour Intersection Turning Movement Volumes

6. FUTURE LEVELS OF SERVICE ANALYSIS

Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix E. Project design features, such as improvements necessary to provide project site access at the Jackson Avenue/Murrieta Hot Springs Road intersection, are assumed to be constructed by the proposed project and are described in further detail in the Site Access & Circulation section later in this report.

BASELINE YEAR (2022)

The study intersection Levels of Service for Baseline Year (2022) conditions are shown in Table 5. As shown in Table 5, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Baseline Year (2022) conditions, except for the following study intersection that is projected to operate at unacceptable Level of Service F (see Table 5):

- Alta Murrieta Drive at Murrieta Hot Springs Road - #3

BASELINE YEAR (2022) PLUS PROJECT

The study intersection Levels of Service for Baseline Year (2022) Plus Project conditions are shown in Table 6. As shown in Table 6, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Baseline Year (2022) Plus Project conditions, except for the following study intersections that are projected to operate at unacceptable Level of Service E/F (see Table 6):

- Alta Murrieta Drive at Murrieta Hot Springs Road - #3
- East Project Driveway at Murrieta Hot Springs Road - #5

Table 6 also shows the project-related change in operations and whether the project is required to provide improvements for Baseline Year (2022) Plus Project conditions. As shown in Table 6, the proposed project does not exceed the City-established operating requirements for General Plan consistency at the study intersections for Baseline Year (2022) Plus Project conditions; therefore, no improvements are required.

More specifically, the project-related increase in delay at the intersection of Alta Murrieta Drive/Murrieta Hot Springs Road (#3) is less than 5.0 seconds. At the unsignalized intersection of East Project Driveway/Murrieta Hot Springs Road (#5), the intersection does not meet the peak hour traffic signal warrant (traffic signal warrant worksheets are provided in Appendix F). Furthermore, the deficient Level of Service E at the East Project Driveway relates only to project trips exiting the site at the stop-controlled southbound approach; eastbound and westbound movements along Murrieta Hot Springs Road are uncontrolled and would operate at Levels of Service A. The 95th-percentile queue length for the southbound right turn lane at the East Project Driveway is not forecast to exceed two vehicle lengths, which can be stored on-site without negatively impacting on-site circulation.

OPENING YEAR (2022) WITHOUT PROJECT

The study intersection Levels of Service for Opening Year (2022) Without Project conditions are shown in Table 7. As shown in Table 7, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2022) Without Project conditions, except for

the following study intersection that is projected to operate at unacceptable Level of Service F (see Table 7):

- Alta Murrieta Drive at Murrieta Hot Springs Road - #3

Opening Year (2022) With Project

The study intersection Levels of Service for Opening Year (2022) With Project conditions are shown in Table 8. As shown in Table 8, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2022) With Project conditions, except for the following study intersections that are projected to operate at unacceptable Level of Service without improvements (see Table 8):

- Alta Murrieta Drive at Murrieta Hot Springs Road - #3
- Jackson Avenue at Murrieta Hot Springs Road - #4
- East Project Driveway at Murrieta Hot Springs Road - #5

Table 8 also shows the project-related change in operations and whether the project is required to provide improvements for Opening Year (2022) With Project conditions. As shown in Table 8, the proposed project exceeds the City-established operating requirements for General Plan consistency at the following study intersection for Opening Year (2022) With Project conditions during the PM peak hour:

- Jackson Avenue at Murrieta Hot Springs Road - #4

The following improvements are recommended for Opening Year (2022) With Project conditions to reduce the project impact to a level that does not exceed the City-established operating requirements for General Plan consistency:

- Jackson Avenue (NS) at Murrieta Hot Springs Road (EW) - #4
  - Install eastbound right turn overlap signal phasing.

As shown in Table 8, the proposed project does not exceed the City-established operating requirements for General Plan consistency at the study intersections for Opening Year (2022) With Project conditions with the recommended improvements.

Roadway Capacity Analysis

The study roadway segment volume to capacity and Level of Service has been calculated and is shown in Table 9 for all analysis scenarios. As shown in Table 9, the study roadway segment is forecast to operate at Level of Service F for each scenario (without and with project) evaluated. The study roadway segment operates at unacceptable Level of Service F without the proposed project and the project does <u>not</u> increase utilization by more than five percent of the roadway capacity (5% x 53,900 = 2,695). The proposed project does not exceed the City-established operating requirements for General Plan consistency at the study roadway segment for the scenarios evaluated; therefore, no improvements are required for the study roadway segment.

Table 5. Baseline Year (2022) Intersection Levels of Service

Table 6. Baseline Year (2022) Plus Project Intersection Level of Service Operations Assessment

Table 7. Opening Year (2022) Without Project Intersection Levels of Service

Table 8. Opening Year (2022) With Project Level of Service Operations Assessment

Table 9. Roadway Segment Daily Capacity Analysis

7. SITE ACCESS ANALYSIS

This section describes the project site access and on-site circulation. The proposed project will provide two access driveways at Murrieta Hot Springs Road. One full access driveway is proposed at the north leg of the Jackson Avenue and Murrieta Hot Springs Road intersection and one right turn in/out only driveway is proposed at the eastern boundary to provide reciprocal access with the easterly adjacent property.

PROJECT DESIGN FEATURES

This analysis assumes the following improvements will be constructed by the project to provide project site access:

Jackson Avenue/Project Driveway at Murrieta Hot Springs Road - #4

- Modify the existing traffic signal, including the addition of new signal heads, to provide split phasing for the north-south direction and protected left-turn phasing for the new eastbound left turn lane.
- Restripe the northbound number two left turn lane to a shared through/left turn lane.
- Construct the southbound approach to consist of one shared left/through/right turn lane.
- Construct a dedicated eastbound left turn lane.
- Construct a dedicated westbound right turn lane immediately east of the intersection.

Project East Driveway at Murrieta Hot Springs Road - #5

- Install southbound stop control.
- Construct the southbound approach to consist of one right turn only lane.

This analysis also assumes the project shall comply with the following conditions as part of the City of Murrieta standard development review process to ensure adequate geometric design and emergency access:

- A construction work site traffic control plan shall comply with State standards set forth in the California Manual of Uniform Traffic Control Devices and shall be submitted to the City for review and approval prior to the issuance of a grading permit or start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closures and detours as well as haul routes and hours of operation. All construction related trips shall be restricted to off-peak hours to the extent possible.

- All on-site and off-site roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project shall be constructed in accordance with applicable State/Federal engineering standards and to the satisfaction of the City of Murrieta.

- Site-adjacent roadways shall be constructed or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of Murrieta.

- Adequate off-street parking shall be provided to the satisfaction of City of Murrieta based on supporting parking and density analysis prepared for the project.

- The final grading, landscaping, and street improvement plans shall demonstrate that sight distance requirements are met in accordance with applicable City of Murrieta/California Department of Transportation sight distance standards.

Circulation Recommendations

Circulation recommendations are illustrated on Figure 34.

Figure 34. Circulation Recommendations

8. IMPROVEMENTS AND RECOMMENDATIONS

This section summarizes the recommended improvements based on the operations analysis from the previous sections. Figure 35 graphically illustrates the recommend improvements.

SITE ACCESS IMPROVEMENTS

The proposed project shall construct the following improvements to provide project site access:

- Jackson Avenue/Project Driveway (NS) at Murrieta Hot Springs Road (EW) - #4
  - Modify the existing traffic signal, including the addition of new signal heads, to provide split phasing for the north-south direction and protected left-turn phasing for the new eastbound left turn lane.
  - Restripe the northbound number two left turn lane to a shared through/left turn lane.
  - Construct the southbound approach to consist of one shared left/through/right turn lane.
  - Construct a dedicated eastbound left turn lane.
  - Construct a dedicated westbound right turn lane immediately east of the intersection.

- Project East Driveway (NS) at Murrieta Hot Springs Road (EW) - #5
  - Install southbound stop control.
  - Construct the southbound approach to consist of one right turn only lane.

LEVEL OF SERVICE IMPROVEMENTS

The following improvements are recommended for Opening Year (2022) With Project conditions to reduce the project impact to a level that does not exceed the City-established operating requirements for General Plan consistency:

- Jackson Avenue (NS) at Murrieta Hot Springs Road (EW) - #4
  - Install eastbound right turn overlap signal phasing.

FAIR SHARE ANALYSIS

Funding for the recommended Level of Service improvements may be available through existing traffic impact fee programs, such as the City of Murrieta Development Impact Fee (DIF) program and/or the County of Riverside Transportation Uniform Mitigation Fee (TUMF) program.

Table 10 shows a fair share analysis for study locations where improvements are recommended. The project fair share amount is determined by the following formula:

Project fair share = project trips / (project trips + future development trips)

The trips noted in the above formula correspond to the peak hour where the deficiency occurs for intersection assessment of daily trips for roadway segment impacts. Where improvements are required for both the AM and PM peak hours, the project fair share is based on the greater of the AM or PM peak hour project share.

Table 10. Fair Share Analysis

Figure 35. Recommended Lane Geometry and Intersection Traffic Controls

9. VEHICLE MILES TRAVELED

This section describes the project Vehicle Miles Travelled (VMT) impact for CEQA compliance. The VMT assessment has been prepared in accordance with methodology established in City of Murrieta TIA Guidelines.

BACKGROUND

California Senate Bill 743 (SB 743) directs the State Office of Planning and Research (OPR) to amend the California Environmental Quality Act (CEQA) Guidelines for evaluating transportation impacts to provide alternatives to Level of Service that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." In December 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines package. The amended CEQA Guidelines, specifically Section 15064.3, recommend the use of Vehicle Miles Travelled (VMT) as the primary metric for the evaluation of transportation impacts associated with land use and transportation projects. In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. All agencies and projects State-wide are required to utilize the updated CEQA guidelines recommending use of VMT for evaluating transportation impacts as of July 1, 2020.

The updated CEQA Guidelines allow for lead agency discretion in establishing methodologies and thresholds provided there is substantial evidence to demonstrate that the established procedures promote the intended goals of the legislation. Where quantitative models or methods are unavailable, Section 15064.3 allows agencies to assess VMT qualitatively using factors such as availability of transit and proximity to other destinations. The Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (State of California, December 2018) ["OPR Technical Advisory"] provides technical considerations regarding methodologies and thresholds with a focus on office, residential, and retail developments as these projects tend to have the greatest influence on VMT.

PROJECT TYPE SCREENING

The City of Murrieta TIA Guidelines identify project type screening criteria for certain types of projects that typically reduce VMT and may be presumed to result in a less than significant VMT impact based on guidance from the OPR Technical Advisory.

Among the project type screening are local serving retail projects, defined as retail developments with less than 50,000 square feet, which may be presumed to have a less than significant VMT impact absent substantial evidence to the contrary. Local serving retail projects will generally redistribute shopping trips rather than creating new trips. By adding retail opportunities into the urban fabric and thereby improving proximity, local serving retail projects tend to shorten trips and reduce VMT.

The proposed project meets the definition of local serving retail since it consists of a 7,250 square foot convenience store/gasoline station that would serve the local community. Therefore, the proposed project satisfies the project type screening criteria for local serving retail and may be presumed to result in a less than significant VMT impact in accordance with VMT guidelines established by the City of Murrieta.

10. CONCLUSIONS

This section summarizes the findings, operational improvements (if any), and recommendations identified and described in previous sections of this study.

Project Trip Generation

The proposed project is forecast to generate a approximately 3,457 new daily trips, including 281 new trips during the AM peak hour and 229 new trips during the PM peak hour.

Levels of Service Analysis

The proposed project does not exceed the City-established operating requirements for General Plan consistency at the study intersections for Baseline Year (2022) Plus Project conditions; therefore, no improvements are required.

The proposed project exceeds the City-established operating requirements for General Plan consistency at the following study intersection for Opening Year (2022) With Project conditions:

- Jackson Avenue at Murrieta Hot Springs Road - #4

The following improvements are recommended for Opening Year (2022) With Project conditions to reduce the project impact to a level that does not exceed the City-established operating requirements for General Plan consistency during the PM peak hour:

- Jackson Avenue (NS) at Murrieta Hot Springs Road (EW) - #4
  - Install eastbound right turn overlap signal phasing.

The proposed project does not exceed the City-established operating requirements for General Plan consistency at the study intersections for Opening Year (2022) With Project conditions with the recommended improvements.

The proposed project does not exceed the City-established operating requirements for General Plan consistency at the study roadway segment for the scenarios evaluated; therefore, no improvements are required for the study roadway segment.

Site Access Improvements

The proposed project shall construct the following improvements to provide project site access:

<u>Jackson Avenue/Project Driveway at Murrieta Hot Springs Road - #4</u>

- Modify the existing traffic signal, including the addition of new signal heads, to provide split phasing for the north-south direction and protected left-turn phasing for the new eastbound left turn lane.
- Restripe the northbound number two left turn lane to a shared through/left turn lane.
- Construct the southbound approach to consist of one shared left/through/right turn lane.
- Construct a dedicated eastbound left turn lane.
- Construct a dedicated westbound right turn lane immediately east of the intersection.

Project East Driveway at Murrieta Hot Springs Road - #5

- Install southbound stop control.
- Construct the southbound approach to consist of one right turn only lane.

Level of Service Improvements

The following improvements are recommended for Opening Year (2022) With Project conditions to reduce the project impact to a level that does not exceed the City-established operating requirements for General Plan consistency:

- Jackson Avenue (NS) at Murrieta Hot Springs Road (EW) - #4
  - Install eastbound right turn overlap signal phasing.

VMT Analysis

The proposed project satisfies the project type screening criteria for local serving retail and may be presumed to result in a less than significant VMT impact in accordance with VMT guidelines established by the City of Murrieta.

APPENDICES

Appendix A Glossary
Appendix B Scoping Agreement
Appendix C Intersection Turning Movement Count Worksheets
Appendix D Traffic Volume Calculations for Clinton Road Extension
Appendix E Intersection Level of Service Worksheets
Appendix F Traffic Signal Warrant Worksheets

APPENDIX A

GLOSSARY

GLOSSARY OF TERMS

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
LOS	Level of Service
PCE	Passenger Car Equivalent
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CONTROL DELAY: The component of delay, typically expressed in seconds per vehicle, resulting from the type of traffic control at an intersection. Control delay is measured by comparison with the uncontrolled condition; it includes delay incurred by slowing down, stopping/waiting, and speeding up.

CARADON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic travelling at a given speed to radically alter their speed or trajectory. Corner sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 36 inches above the pavement in the center of the nearest approach lane.

CYCLE LENGTH: The time period in seconds required for a traffic signal to complete one full cycle of indications.

CUL-DE-SAC: A local street open at one end only and with special provisions for turning around.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, super-elevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

PASSENGER CAR EQUIVALENT (PCE): A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SHARED/RECIPROCAL PARKING AGREEMENT: A written binding document executed between property owners to provide a designated number of off-street parking stalls within a designated area to be available for specified businesses or land uses.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queueing to occur.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through an intersection.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle on the major roadway travelling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 6 inches above the pavement.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

TURNING RADIUS: The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheel base as well as the steering mechanism of the vehicle.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

SCOPING AGREEMENT

APPENDIX C

INTERSECTION TURNING MOVEMENT COUNT WORKSHEETS

APPENDIX D

TRAFFIC VOLUME CALCULATIONS FOR CLINTON ROAD EXTENSION

APPENDIX E

INTERSECTION LEVEL OF SERVICE WORKSHEETS

EXISTING

BASELINE YEAR (2022)

BASELINE YEAR (2022) PLUS PROJECT

OPENING YEAR (2022) WITHOUT PROJECT

OPENING YEAR (2022) WITH PROJECT

BASELINE YEAR (2022)
WITH IMPROVEMENTS

BASELINE YEAR (2022) PLUS PROJECT
WITH IMPROVEMENTS

OPENING YEAR (2022) WITHOUT PROJECT
WITH IMPROVEMENTS

OPENING YEAR (2022) WITH PROJECT
WITH IMPROVEMENTS

APPENDIX F

TRAFFIC SIGNAL WARRANT WORKSHEETS