

		N15	C15-N2	Detention Pond (PS5)	5,786	CY	4.00	23,144
		N15	C15-N2	24" RCP outlet structure with a 1 x 1' Orifice	100	LF	65.55	6,555
		N15	C15-N2	Detention Pond (PS6)	14,121	CY	4.00	56,484
		N15	C15-N2	4.5' x 3.5' Concrete Box Outlet with a 3.5 x 2.9' Orifice	106	LF	372.79	39,516
		N15	C15-N2	Detention Pond (PS7)	36,330	CY	4.00	145,320
		N15	C15-N2	3.5' x 3.5' concrete box outlet structure with a 3' x 3.2' Orifice	1,532	LF	313.42	480,159
		N15	C15-N2	Detention Pond (PS4)	37,814	CY	4.00	151,256
		N15	C15-N2	3.5' x 3' concrete box outlet structure with a 2.6' x 2' Orifice	70	LF	285.10	19,957
		N2	C2-13	3.5' x 2.5' Concrete Box Culverts	75	LF	285.10	21,383
		N13	C13-12	No Improvements Recommended	2,559	NA	NA	0
		N12	C12-12A	3.5' x 3' Concrete Box Culvert	42	LF	285.10	11,974
		N12A	C12A-11	Grass Channel (b=3.4', d=4', z=4:1)	77,080	SF	0.33	25,436
				Excavation for grass channel	7,809	CY	7.71	60,204
		N12A	C12A-11	Concrete Channel (b=2.5', d=4' z=4:1)	8,235	SY	49.50	407,633
				Excavation for concrete channel	7,808	CY	7.71	60,203
	100-year Storm	N15	C15-N2	6' x 4' Concrete Box Culvert	184	LF	502.48	92,456
		N15	C15-N2	Detention Pond (PS5)	5,786	CY	4.00	23,144
		N15	C15-N2	4' x 3.5' concrete box outlet structure with a 3.4' x 3' Orifice	100	LF	342.65	34,265
		N15	C15-N2	Detention Pond (PS6)	14,121	CY	4.00	56,484
		N15	C15-N2	11.5' x 4' Concrete Box Culvert Outlet with a 4' x 10.5' Orifice	106	LF	934.41	99,047
		N15	C15-N2	Detention Pond (PS7)	36,330	CY	4.00	145,320
		N15	C15-N2	11.5' x 4' Concrete Box Culvert Outlet with a 11.1' x 4' Orifice	1,532	LF	934.41	1,431,516
		N15	C15-N2	Detention Pond (PS4)	37,814	CY	4.00	151,256
		N15	C15-N2	12' x 4' Concrete Box Culvert Outlet with a 11.9' x 4' Orifice	70	LF	979.15	68,541
		N2	C2-13	(2) 6' x 4' Concrete Box Culverts	75	LF	1,004.96	
		N13	C13-12	Grass Channel ((b=21', d=4', z=4:1)	135,627	SF	0.33	
				Excavation for grass channel	6,069	CY	7.71	
		N13	C13-12	Concrete Channel (b=4.7', d=4' z=4:1)	10,435	SY	49.50	
				Excavation for concrete channel	6,067	CY	7.71	
		N12	C12-12A	12 'x 4' Concrete Box Culvert	42	LF	979.15	
		N12A	C12A-11	Grass Channel (b=34.7', d=4' z=4:1)	219,710	SF	0.33	72,504
				Excavation for grass channel	7,812	CY	7.71	60,229
	N12A	C12A-11	Concrete Channel (b=11.7', d=4' z=4:1)	15,994	SY	49.50	791,713	
			Excavation for concrete channel	7,808	CY	7.71	60,203	
10	5-year Storm with Detention	N8A	C8A-127A	Detention pond (PS2)	11,052	CY	4.00	44,208
		N8A	C8A-127A	48" RCP outlet structure with a 3' x 2.6' Orifice	20	LF	158.54	3,171
		N127A	C127A-129A	Upsizing of piping system or the construction of an overflow path.	1	NA	NA	0
		N129A	C129A-128	5.5 x 4' Concrete Box Culvert	262	LF	468.69	122,797
		N128	C128-128A	6.5' x 3.5' Concrete Box Culvert	132	LF	502.48	66,327

	N128A	C128A-3	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N3	C3-1	No Improvements Recommended	2,831	NA	NA	0
	N5A	C5A-10	8' x 4' Concrete Box Culvert	786	LF	646.77	508,361
	N5A	C5A-10	Detention Pond (PS3)	72,864	CY	4.00	291,456
	N5A	C5A-10	4' x 3.5' concrete box outlet structure with a 3' x 3' Orifice	70	LF	342.65	23,986
	N10	C10-10A	No Improvements Recommended	3,358	NA	NA	0
	N10	C10A-1	48" RCP	30	LF	158.54	4,756
5-year Storm with No Detention	N8A	C8A-127	No Improvements Recommended	1	NA	NA	0
	N127	C127-127A	6.5' X 4' Concrete Box Culvert	59	LF	7.71	455
	N127A	C127A-129A	Upsizing of piping system or the construction of an overflow path.	1	NA	NA	0
	N129A	C129A-128	9' x 4' Concrete Box Culverts	262	LF		0
	N128	C128-128A	9' x 4' Concrete Box Culverts	132	LF		0
	N128A	C128A-3	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N3	C3-1	Grass swale (b=4', d=3.5', z=4:1)	90,592	SF	0.33	29,895
			Excavation for grass channel	5,139	CY	7.71	39,621
	N5A	C5A-10	8' x 4' Concrete Box Culvert	786	LF	646.77	508,361
	N5A	C5A-10	Detention Pond (PS3)	72,864	CY	4.00	291,456
	N5A	C5A-10	4' x 3.5' concrete box outlet structure with a 3' x 3' Orifice	70	LF	342.65	23,986
	N10	C10-10A	No Improvements Recommended	3,358	NA	NA	0
N10	C10A-1	48" RCP	30	LF	158.54	4,756	
100-year Storm with Detention	N8A	C8A-127A	Detention pond (PS2)	11,052	CY	4.00	44,208
	N8A	C8A-127A	6.5' x 4' concrete box outlet structure with a 6.3' x 4' Orifice	20	LF	537.18	10,744
	N127A	C127A-129A	Upsizing of piping system or the construction of an overflow path.	1	NA	NA	0
	N129A	C129A-128	(2) 6.5' x 4' Concrete Box Culverts	262	LF	1,074.36	281,482
	N128	C128-128A	(2) 6.5' x 4' Concrete Box Culverts	132	LF	1,074.36	141,816
	N128	C128-128A	(1) 11' x 4' Concrete Box Culvert	132	LF	890.58	117,557
	N128A	C128A-3	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N3	C3-1	Grass Channel (b=4.3', d=4', z=4:1)	102,765	SF	0.33	33,913
			Excavation for grass channel	6,712	CY	7.71	51,750
	N5A	C5A-10	(2) 8' x 4' Concrete Box Culvert	786	LF	1,293.54	1,016,722
	N5A	C5A-10	Detention Pond (PS3)	72,864	CY	4.00	291,456
	N5A	C5A-10	(2) 9' x 4' concrete box outlet structure with a 16' x 4' Orifice	70	LF	1,448.78	101,415
	N10	C10-10A	Grass Channel (b=30' d=4' z=4:1)	208,196	SF	0.33	68,705
			Excavation for grass channel	7,963	CY	7.71	61,396
N10	C10-10A	Concrete Channel (b =10', d=4' z=4:1)	15,671	SY	49.50	775,698	
		Excavation for concrete channel	7,962	CY	7.71	61,384	

		N10	C10A-1	(2) 7' x 4' Concrete Box Culverts	30	LF	1,145.60	34,368
		N8A	C8A-127	No Improvements Recommended	1	NA	NA	0
		N127	C127-127A	10' X 4' Concrete Box Culvert	59	LF	847.88	50,025
		N127A	C127A-129A	Upsizing of piping system or the construction of an overflow path.	1	NA	NA	0
		N129A	C129A-128	(2) 9' x 4' Concrete Box Culverts	262	LF	1,448.78	379,580
		N128	C128-128A	(2) 9' x 4' Concrete Box Culverts	132	LF	1,448.78	191,239
		N128A	C128A-3	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
		N3	C3-1	Grass swale (b=10.1', d=3.5', z=4:1)	107,861	SF	0.33	35,594
				Excavation for grass channel	5,139	CY	7.71	39,624
		N5A	C5A-10	(2) 8' x 4' Concrete Box Culvert	786	LF	1,293.54	1,016,722
		N5A	C5A-10	Detention Pond (PS3)	72,864	CY	4.00	291,456
		N5A	C5A-10	(2) 9.5' x 4' concrete box outlet structure with a16' x 4.3' Orifice	70	LF	1,529.14	107,040
		N10	C10-10A	Grass Channel (b=32' d=4' z=4:1)	214,912	SF	0.33	70,921
				Excavation for grass channel	7,963	CY	7.71	61,397
		N10	C10-10A	Concrete Channel (b =10', d=4' z=4:1)	15,671	SY	49.50	775,698
				Excavation for concrete channel	7,962	CY	7.71	61,384
		N10	C10A-1	(2) 7.5' x 4' Concrete Box Culverts	30	LF	1,218.66	36,560
11		N11-7	C7-6	36" RCP	38	LF	99.26	3,772
		N11-6	C6-2	36" RCP	204	LF	99.26	20,249
		N11-5	C5-4	24' RCP	32	LF	66.55	2,130
		N11-4	C4-4A	24" RCP	4	LF	65.55	262
		N11-4A	C4A-3	48" RCP	235	LF	158.54	37,257
		N11-3	C3-2	4.5' x 4' Concrete Box Culvert	40	LF	403.84	16,154
		N11-2	C2-1	5' x 4' Concrete Box Culvert	119	LF	435.81	51,861
		N111	C111-129A	5' x 4' Concrete Box Culvert	40	LF	435.81	17,432
		N11-1A	C129A-128	5.5 x 4' Concrete Box Culvert	247	LF	468.69	115,766
		N11-7	C7-6	48" RCP	38	LF	158.54	6,025
		N11-6	C6-2	48" RCP	204	LF	158.54	32,342
		N11-5	C5-4	30" RCP	32	LF	86.80	2,778
		N11-4	C4-4A	30" RCP	4	LF	86.80	347
		N11-4A	C4A-3	7' x 4' Concrete Box Culvert	235	LF	572.80	134,608
		N11-3	C3-2	9' x 4' Concrete Box Culvert	40	LF	724.39	28,976
		N11-2	C2-1	10' x 4' Concrete Box Culvert	119	LF	847.88	100,898
		N111	C111-129A	(2) 6' x 4' Concrete Box Culvert	40	LF	1,004.96	40,198
		N11-1A	C129A-128	(2) 6.5 x 4' Concrete Box Culverts	247	LF	1,074.36	265,367
12	5- year Storm	N12-3	C3-2	30" RCP	60	LF	86.80	5,208

		N12-2	C2-1	42" RCP	36	LF	111.72	4,022
		N12-1	C1-12	42" RCP	118	LF	111.72	13,183
	100- year Storm	N12-3	C3-2	36" RCP	60	LF	99.26	5,956
		N12-2	C2-1	48" RCP	36	LF	158.54	5,707
		N12-1	C1-12	48" RCP	118	LF	158.54	18,708
13	5-year Storm	N6	C6-6A	Make high point and grade downstream swale and culverts to ensure a 0.5% minimum slope	30.3	LF	7.09	215
		N6A	C6A-8	Regrade to ensure a 0.5% minimum slope	174	LF	7.09	1,234
		N8	C8-8A	Regrade to ensure a 0.5% minimum slope	29	LF	7.09	206
		N8A	C8A-7	Regrade to ensure a 0.5% minimum slope	55	LF	7.09	390
		N7	C7-7A	Regrade to ensure a 0.5% minimum slope	29.9	LF	7.09	212
		N7A	C7A-21	Regrade to ensure a 0.5% minimum slope	20	LF	7.09	142
		N21	C21-21A	No Improvements Recommended	20	LF	NA	0
		N11A	C11A-10	No Improvements Recommended	44	LF	NA	0
		N10	C10-10A	No Improvements Recommended	62	LF	NA	0
		N10A	C10A-15A	No Improvements Recommended	100	LF	NA	0
		N15	C15-15A	No Improvements Recommended	100	LF	NA	0
		N15A	C15A-9	No Improvements Recommended	14	LF	NA	0
		N9	C9-9A	(2) 24" RCP (1 Exists)	65	LF	65.55	4,228
		N9A	C9A-21	No Improvements Recommended	135	LF	NA	0
		N5	C5-5A	No Improvements Recommended	21	LF	NA	0
		N5A	C5A-4	No Improvements Recommended	214	LF	NA	0
		N4	C4-4A	15" RCP	38	LF	32.92	1,254
		N4A	C4A-3	No Improvements Recommended	151	LF	NA	0
		N3	C3-3A	No Improvements Recommended	40	LF	NA	0
		N3A	C3A-13A	No Improvements Recommended	36	LF	NA	0
N13A	C13A	No Improvements Recommended	5	LF	NA	0		
N2	C2-2A	No Improvements Recommended	30	LF	NA	0		
N2A	C2A-1	No Improvements Recommended	18	LF	NA	0		
N1	C1-1	No Improvements Recommended	43	LF	NA	0		
	100-year Storm	N6	C6-6A	Make high point and grade downstream swale and culverts to ensure a 0.5% minimum slope	30.3	LF	7.09	215
		N6A	C6A-8	Regrade to ensure a 0.5% minimum slope	174	LF	7.09	1,234
		N8	C8-8A	15" RCP at 0.5%	29	LF	32.92	955
		N8A	C8A-7	Regrade to ensure a 0.5% minimum slope	55	LF	7.09	390
		N7	C7-7A	Regrade to ensure a 0.5% minimum slope	29.9	LF	7.09	212
		N7A	C7A-21	Regrade to ensure a 0.5% minimum slope	20	LF	7.09	142
		N21	C21-21A	No Improvements Recommended	20	LF	NA	0

	N11A	C11A-10	No Improvements Recommended	44	LF	NA	0
	N10	C10-10A	No Improvements Recommended	62	LF	NA	0
	N10A	C10A-15A	No Improvements Recommended	137	LF	NA	0
	N15A	C15-15A	(2) 24" RCP (1 Exists)	100	LF	65.55	6,555
	N15A	C15A-9	No Improvements Recommended	14	LF	NA	0
	N9	C9-9A	(2) 30" RCP	65	LF	86.80	5,599
	N9A	C9A-21	No Improvements Recommended	135	LF	NA	0
	N5	C5-5A	No Improvements Recommended	21	LF	NA	0
	N5A	C5A-4	No Improvements Recommended	214	LF	NA	0
	N4	C4-4A	(2) 18" RCP	38	LF	79.00	3,010
	N4A	C4A-3	No Improvements Recommended	151	LF	NA	0
	N3	C3-3A	No Improvements Recommended	40	LF	NA	0
	N3A	C3-13A	No Improvements Recommended	36	LF	NA	0
	N13A	C13A	No Improvements Recommended	5	LF	NA	0
	N2	C2-2A	No Improvements Recommended	30	LF	NA	0
	N2A	C2A-1	No Improvements Recommended	18	LF	NA	0
	N1	C1-1	No Improvements Recommended	43	LF	NA	0

Study Area Contingency Costs

Study Area	Storm Event	Recommended Improvement Cost	Contingency	Contingency Unit	Contingency Unit Cost (\$)	Contingency Cost (\$)
1	5-year Storm with Detention	862,580	Construction Management	LS	8% of total cost	69,006
			Contingency	LS	10% of total cost	86,258
			Design and Permitting	LS	10% of total cost	86,258
			Mobilization/Demobilization	LS	5% of total cost	43,129
			Site Preparation	LS	10% of total cost	86,258
			Erosion & Sediment Control	LS	5% of total cost	43,129
			Incidentals	LS	20% of total cost	172,516
	5-year Storm with No Detention	1,092,420	Construction Management	LS	8% of total cost	87,394
		Contingency	LS	10% of total cost	109,242	

			Design and Permitting	LS	10% of total cost	109,242
			Mobilization/Demobilization	LS	5% of total cost	54,621
			Site Preparation	LS	10% of total cost	109,242
			Erosion & Sediment Control	LS	5% of total cost	54,621
			Incidentals	LS	20% of total cost	218,484
	100-year Storm with Detention	1,164,657	Construction Management	LS	8% of total cost	93,173
			Contingency	LS	10% of total cost	116,466
			Design and Permitting	LS	10% of total cost	116,466
			Mobilization/Demobilization	LS	5% of total cost	58,233
			Site Preparation	LS	10% of total cost	116,466
			Erosion & Sediment Control	LS	5% of total cost	58,233
			Incidentals	LS	20% of total cost	232,931
	100-year Storm with No Detention	2,391,537	Construction Management	LS	8% of total cost	191,323
			Contingency	LS	10% of total cost	239,154
			Design and Permitting	LS	10% of total cost	239,154
			Mobilization/Demobilization	LS	5% of total cost	119,577
			Site Preparation	LS	10% of total cost	239,154
			Erosion & Sediment Control	LS	5% of total cost	119,577
			Incidentals	LS	20% of total cost	478,307
2	5-year Storm	0				
	100-year Storm	0				
3	5-year Storm	84,210	Construction Management	LS	8% of total cost	6,737
			Contingency	LS	10% of total cost	8,421
			Design and Permitting	LS	10% of total cost	8,421
			Mobilization/Demobilization	LS	5% of total cost	4,210
			Site Preparation	LS	10% of total cost	8,421
			Erosion & Sediment Control	LS	5% of total cost	4,210
			Incidentals	LS	20% of total cost	16,842
	100-year Storm	59,992	Construction Management	LS	8% of total cost	4,799
			Contingency	LS	10% of total cost	5,999
			Design and Permitting	LS	10% of total cost	5,999
			Mobilization/Demobilization	LS	5% of total cost	3,000
			Site Preparation	LS	10% of total cost	5,999
			Erosion & Sediment Control	LS	5% of total cost	3,000
			Incidentals	LS	20% of total cost	11,998

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	5-year Storm*	636,424	Construction Management	LS	8% of total cost	50,914
			Contingency	LS	10% of total cost	63,642
			Design and Permitting	LS	10% of total cost	63,642
			Mobilization/Demobilization	LS	5% of total cost	31,821
			Site Preparation	LS	10% of total cost	63,642
			Erosion & Sediment Control	LS	5% of total cost	31,821
			Incidentals	LS	20% of total cost	127,285
	100-year Storm	322,308	Construction Management	LS	8% of total cost	25,785
			Contingency	LS	10% of total cost	32,231
			Design and Permitting	LS	10% of total cost	32,231
			Mobilization/Demobilization	LS	5% of total cost	16,115
			Site Preparation	LS	10% of total cost	32,231
Erosion & Sediment Control			LS	5% of total cost	16,115	
Incidentals			LS	20% of total cost	64,462	
5	5-year Storm	10,000	Contingencies includedi in price.			
	100-year Storm	10,000	Contingencies includedi in price.			
6	Northwest corner					
	5-year Storm	758,046	Construction Management	LS	8% of total cost	60,644
			Contingency	LS	10% of total cost	75,805
			Design and Permitting	LS	10% of total cost	75,805
			Mobilization/Demobilization	LS	5% of total cost	37,902
			Site Preparation	LS	10% of total cost	75,805
			Erosion & Sediment Control	LS	5% of total cost	37,902
			Incidentals	LS	20% of total cost	151,609
	Northeast corner					
	5-year Storm	828,559	Construction Management	LS	8% of total cost	66,285
			Contingency	LS	10% of total cost	82,856
			Design and Permitting	LS	10% of total cost	82,856
			Mobilization/Demobilization	LS	5% of total cost	41,428
Site Preparation			LS	10% of total cost	82,856	
Erosion & Sediment Control			LS	5% of total cost	41,428	
Incidentals			LS	20% of total cost	165,712	
Northwest corner						
100-year Storm	1,204,458	Construction Management	LS	8% of total cost	96,357	
		Contingency	LS	10% of total cost	120,446	

			Design and Permitting	LS	10% of total cost	120,446
			Mobilization/Demobilization	LS	5% of total cost	60,223
			Site Preparation	LS	10% of total cost	120,446
			Erosion & Sediment Control	LS	5% of total cost	60,223
			Incidentals	LS	20% of total cost	240,892
	Northeast corner					
	100-year Storm	2,411,143	Construction Management	LS	8% of total cost	192,891
			Contingency	LS	10% of total cost	241,114
			Design and Permitting	LS	10% of total cost	241,114
			Mobilization/Demobilization	LS	5% of total cost	120,557
			Site Preparation	LS	10% of total cost	241,114
			Erosion & Sediment Control	LS	5% of total cost	120,557
			Incidentals	LS	20% of total cost	482,229
7	5-year Storm	329,496	Construction Management	LS	8% of total cost	26,360
			Contingency	LS	10% of total cost	32,950
			Design and Permitting	LS	10% of total cost	32,950
			Mobilization/Demobilization	LS	5% of total cost	16,475
			Site Preparation	LS	10% of total cost	32,950
			Erosion & Sediment Control	LS	5% of total cost	16,475
			Incidentals	LS	20% of total cost	65,899
	100-year Storm	490,915	Construction Management	LS	8% of total cost	39,273
			Contingency	LS	10% of total cost	49,092
			Design and Permitting	LS	10% of total cost	49,092
			Mobilization/Demobilization	LS	5% of total cost	24,546
			Site Preparation	LS	10% of total cost	49,092
			Erosion & Sediment Control	LS	5% of total cost	24,546
			Incidentals	LS	20% of total cost	98,183
8	5-year Storm	71,145	Construction Management	LS	8% of total cost	5,692
			Contingency	LS	10% of total cost	7,114
			Design and Permitting	LS	10% of total cost	7,114
			Mobilization/Demobilization	LS	5% of total cost	3,557
			Site Preparation	LS	10% of total cost	7,114
			Erosion & Sediment Control	LS	5% of total cost	3,557
			Incidentals	LS	20% of total cost	14,229
	100-year Storm	142,289	Construction Management	LS	8% of total cost	11,383
			Contingency	LS	10% of total cost	14,229
			Design and Permitting	LS	10% of total cost	14,229

			Mobilization/Demobilization	LS	5% of total cost	7,114
			Site Preparation	LS	10% of total cost	14,229
			Erosion & Sediment Control	LS	5% of total cost	7,114
			Incidentals	LS	20% of total cost	28,458
9	5-year Storm	1,572,272	Construction Management	LS	8% of total cost	125,782
			Contingency	LS	10% of total cost	157,227
			Design and Permitting	LS	10% of total cost	157,227
			Mobilization/Demobilization	LS	5% of total cost	78,614
			Site Preparation	LS	10% of total cost	157,227
			Erosion & Sediment Control	LS	5% of total cost	78,614
			Incidentals	LS	20% of total cost	314,454
	100-year Storm	3,086,679	Construction Management	LS	8% of total cost	246,934
			Contingency	LS	10% of total cost	308,668
			Design and Permitting	LS	10% of total cost	308,668
			Mobilization/Demobilization	LS	5% of total cost	154,334
			Site Preparation	LS	10% of total cost	308,668
			Erosion & Sediment Control	LS	5% of total cost	154,334
			Incidentals	LS	20% of total cost	617,336
10	5-year Storm with Detention	1,065,062	Construction Management	LS	8% of total cost	85,205
			Contingency	LS	10% of total cost	106,506
			Design and Permitting	LS	10% of total cost	106,506
			Mobilization/Demobilization	LS	5% of total cost	53,253
			Site Preparation	LS	10% of total cost	106,506
			Erosion & Sediment Control	LS	5% of total cost	53,253
			Incidentals	LS	20% of total cost	213,012
	5-year Storm with No Detention	898,530	Construction Management	LS	8% of total cost	71,882
			Contingency	LS	10% of total cost	89,853
			Design and Permitting	LS	10% of total cost	89,853
			Mobilization/Demobilization	LS	5% of total cost	44,927
			Site Preparation	LS	10% of total cost	89,853
			Erosion & Sediment Control	LS	5% of total cost	44,927
			Incidentals	LS	20% of total cost	179,706
	100-year Storm with Detention	3,092,612	Construction Management	LS	8% of total cost	247,409
			Contingency	LS	10% of total cost	309,261
			Design and Permitting	LS	10% of total cost	309,261
			Mobilization/Demobilization	LS	5% of total cost	154,631

			Site Preparation	LS	10% of total cost	309,261
			Erosion & Sediment Control	LS	5% of total cost	154,631
			Incidentals	LS	20% of total cost	618,522
	100-year Storm with No Detention	3,117,240	Construction Management	LS	8% of total cost	249,379
			Contingency	LS	10% of total cost	311,724
			Design and Permitting	LS	10% of total cost	311,724
			Mobilization/Demobilization	LS	5% of total cost	155,862
			Site Preparation	LS	10% of total cost	311,724
			Erosion & Sediment Control	LS	5% of total cost	155,862
			Incidentals	LS	20% of total cost	623,448
11	5-year Storm	264,883	Construction Management	LS	8% of total cost	21,191
			Contingency	LS	10% of total cost	26,488
			Design and Permitting	LS	10% of total cost	26,488
			Mobilization/Demobilization	LS	5% of total cost	13,244
			Site Preparation	LS	10% of total cost	26,488
			Erosion & Sediment Control	LS	5% of total cost	13,244
			Incidentals	LS	20% of total cost	52,977
	100-year Storm	611,538	Construction Management	LS	8% of total cost	48,923
			Contingency	LS	10% of total cost	61,154
			Design and Permitting	LS	10% of total cost	61,154
			Mobilization/Demobilization	LS	5% of total cost	30,577
			Site Preparation	LS	10% of total cost	61,154
			Erosion & Sediment Control	LS	5% of total cost	30,577
			Incidentals	LS	20% of total cost	122,308
12	5-year Storm	22,413	Construction Management	LS	8% of total cost	1,793
			Contingency	LS	10% of total cost	2,241
			Design and Permitting	LS	10% of total cost	2,241
			Mobilization/Demobilization	LS	5% of total cost	1,121
			Site Preparation	LS	10% of total cost	2,241
			Erosion & Sediment Control	LS	5% of total cost	1,121
			Incidentals	LS	20% of total cost	4,483
	100-year Storm	30,371	Construction Management	LS	8% of total cost	2,430
			Contingency	LS	10% of total cost	3,037
			Design and Permitting	LS	10% of total cost	3,037
			Mobilization/Demobilization	LS	5% of total cost	1,519
			Site Preparation	LS	10% of total cost	3,037

			Erosion & Sediment Control	LS	5% of total cost	1,519
			Incidentals	LS	20% of total cost	6,074
13	5-year Storm	0	Construction Management	LS	8% of total cost	0
			Contingency	LS	10% of total cost	0
			Design and Permitting	LS	10% of total cost	0
			Mobilization/Demobilization	LS	5% of total cost	0
			Site Preparation	LS	10% of total cost	0
			Erosion & Sediment Control	LS	5% of total cost	0
			Incidentals	LS	20% of total cost	0
	100-year Storm	0	Construction Management	LS	8% of total cost	0
			Contingency	LS	10% of total cost	0
			Design and Permitting	LS	10% of total cost	0
			Mobilization/Demobilization	LS	5% of total cost	0
			Site Preparation	LS	10% of total cost	0
			Erosion & Sediment Control	LS	5% of total cost	0
			Incidentals	LS	20% of total cost	0

* Cost is for a rectangular concrete channel (d=2', b=9.5')

Recommended Capital Improvement Costs 5-Year

Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost (\$)	Item Cost (\$)
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N5A	C5A-10	8' x 4' Concrete Box Culvert	786	LF	646.77	508,361
N5A	C5A-10	Detention Pond (PS3)	72,864	CY	4.00	291,456
N5A	C5A-10	4' x 3.5' concrete box outlet structure with a 3' x 3' Orifice	70	LF	342.65	23,986
N10	C10-10A	No Improvements Recommended	3,358	NA	NA	0
N10A	C10A-1	48" RCP	30	LF	158.54	4,756
N111	C111-111A	6' x 4' Concrete Box Culvert	46	LF	502.48	23,114
N111A	C111A-7	Concrete Channel (b=8.5', d=2.1', z=1:1)	474	SY	49.50	23,470
		Excavation for concrete channel	55	CY	7.71	426
N112	C112-111	No Improvements Recommended	344	NA	NA	0
N126	C126-126A	No Improvements Recommended	57	NA	NA	0
N126A	C126A-8	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
N127A	C127A-128	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
N128	C128-128A	6.5' x 3.5' Concrete Box Culvert	132	LF	502.48	66,327
N128A	C128A-3	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
N129	C129-129A	42" RCP	362	LF	111.72	40,443
N129A	C129A-128	5.5 x 4' Concrete Box Culvert	262	LF	468.69	122,797
N130	C130-130A	No Improvements Recommended	68	NA	NA	0
N130A	C130A-137A	No Improvements Recommended	722	NA	NA	0
N131	C131-131A	30" RCP	70	LF	86.80	6,076
N131A	C131A-111	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
N132	C132-132A	54" RCP	55	LF	197.26	10,849

N132	C132-132A	4.5' x 3.5' Concrete Box Culvert	55	LF	372.79	20,503	
N132A	C132A-112	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
N137	C137-137A	30" RCP	107	LF	86.80	9,288	
N137A	C137A-132	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
N139	C139-5	NA -Conveyance used to simulate overland flow.	1	NA	NA	0	
N3	C3-1	No Improvements Recommended	2,831	NA	NA	0	
N7	C7-7A	No Improvements Recommended	177	NA	NA	0	
N7A	C7A-6	Concrete Channel (b=9', d=2.5', z=1:1) at 0.5%	1,062	SY	49.50	52,591	
		Excavation for concrete channel	159	CY	7.71	1,223	
N6	C6-6A	7' x 4' Concrete Box Culvert at 0.5%	65	LF	572.80	37,232	
N6A	C6A-5	7' x 4' Concrete Box Culvert at 0.5%	440	LF	572.80	252,032	
N6A	C6A-5	Concrete Channel (b=9.5, d=2.5, z=1:1)	684	SY	49.50	33,880	
		Excavation for concrete channel	82	CY	7.71	633	
N5	C5-5A	8' x 4' Concrete Box Culvert at 0.5%	110	LF	646.77	71,145	
N8	C8-8A	8' x 3' Concrete Box Culvert	81	LF	572.80	46,397	
N8A	C8A-127A	Use existing swale	60	LF	NA	0	
N8A	C8A-127A	Extend 8' x 3' Concrete Box Culvert	60	LF	572.80	34,368	
N8A	C8A-127A	Detention pond (PS2)	11,052	CY	4.00	44,208	
N8A	C8A-127A	48" RCP outlet structure with a 3' x 2.6' Orifice	20	LF	158.54	3,171	
N9	C9-10	Grass Channel (b=4', d=4', z=4:1)	12,168	SF	0.33	4,015	
		Excavation for grass channel	803	CY	7.71	6,189	
N9	C9-10	Concrete Channel (b=2.9', d=4', z=4:1)	980	SY	49.50	48,520	
		Excavation for concrete channel	582	CY	7.71	4,487	
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
2	N11	C11-2	No Improvements Recommended	59	LF	NA	0

N12	C12-12A	3.5' x 3' Concrete Box Culvert	42	LF	285.10	11,974
N12A	C12A-11	Grass Channel (b=3.4', d=4', z=4:1)	77,080	SF	0.33	25,436
		Excavation for grass channel	7,809	CY	7.71	60,204
N12A	C12A-11	Concrete Channel (b=2.5', d=4' z=4:1)	8,235	SY	49.50	407,633
		Excavation for concrete channel	7,808	CY	7.71	60,203
N13	C13-12	No Improvements Recommended	2,559	NA	NA	0
N133	C133-15	54" RCP	1,614	LF	197.26	318,378
N134	C134-133	48" RCP	566	LF	158.54	89,734
N135	C135-134	48" RCP	639	LF	158.54	101,307
N14	C14-14A	No Improvements Recommended	38	NA	NA	0
N142	C142-2	No Improvements Recommended	44	NA	NA	0
N14A	C14A-12	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N15	C15-N2	4' x 3.5' Concrete Box Culvert	184	LF	342.65	63,048
N15	C15-N2	Detention Pond (PS5)	5,786	CY	4.00	23,144
N15	C15-N2	24" RCP outlet structure with a 1 x 1' Orifice	100	LF	65.55	6,555
N15	C15-N2	Detention Pond (PS6)	14,121	CY	4.00	56,484
N15	C15-N2	4.5' x 3.5' Concrete Box Outlet with a 3.5 x 2.9' Orifice	106	LF	372.79	39,516
N15	C15-N2	Detention Pond (PS7)	36,330	CY	4.00	145,320
N15	C15-N2	3.5' x 3.5' concrete box outlet structure with a 3' x 3.2' Orifice	1,532	LF	313.42	480,159
N15	C15-N2	Detention Pond (PS4)	37,814	CY	4.00	151,256
N15	C15-N2	3.5' x 3' concrete box outlet structure with a 2.6' x 2' Orifice	70	LF	285.10	19,957
N16	C16-16A	No Improvements Recommended	130	NA	NA	0
N16A	C16A-18	Concrete Channel (b=6', d=1.8', z=2:1)	909	SY	49.50	45,012
		Excavation for concrete channel	149	CY	7.71	1,150
N17	C17-17A	No Improvements Recommended	53	NA	NA	0
N17A	C17A-11	NA - Conveyance used to simulate overland flow.	2,256	NA	NA	0

N18	C18-18A	No Improvements Recommended	120	NA	NA	0	
N18A	C18A-54	Grass Channel (b=4', d=3.44', z=3:1)	33,412	SF	0.33	11,026	
		Excavation for grass channel	1,784	CY	7.71	13,753	
N18A	C18A-54	10' x 4' Concrete Box Culverts	1,450	LF	847.88	1,229,426	
N19	C19-13	No Improvements Recommended	196	NA	NA	0	
N20	C20-C20A	No Improvements Recommended	51	NA	NA	0	
N20A	C20A-12	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
N21	C21-21A	No Improvements Recommended	48	LF	NA	0	
N21A	C21A-20	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
N2	C2-13	3.5' x 3' Concrete Box Culverts	75	LF	285.10	21,383	
S17	S17-16	No Improvements Recommended	1	NA	NA	0	
S17E	S17E-S17	No Improvements Recommended	1	NA	NA	0	
S17W	S17W-S17E	No Improvements Recommended	1	NA	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
3	N146	C146-146A	No Improvements Recommended	247	LF	NA	0
	N146A	C146A-114	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N113	C113-23	5' x 3.5' Concrete Box	710	LF	403.84	286,726
	N114	C114-113	30" RCP	865	LF	86.80	75,082
	N115	C115-113	6' x 2' Concrete Box Culvert	843	LF	372.79	314,262
	N115	C115-113	Concrete Channel (b=6', d=1.3', z=0.5:1)	684	SY	49.50	33,846
			Excavation for concrete channel	27	CY	4.00	106
	N116	C116-116A	30" RCP	333	LF	86.80	28,904
	N116A	C116A-115	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0

N117	C117-117A	36" RCP	178	LF	99.26	17,668	
N117A	C117A-115	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
N23	C23-25	No Improvements Recommended	513	NA	NA	0	
N25	C25-26A	(2) 60" CMP (1 Exists)	402	LF	242.63	97,537	
N25	C25-26A	Detention Pond (PS1)	10,525	CY	4.00	42,100	
N25	C25-26A	3.5' x 3' concrete box outlet structure with a 2.5' x 2.4' Orifice	56	LF	285.10	15,966	
N26A	C26A-29	5' x 4' Concrete Box Culvert	174	LF	435.81	75,831	
N29	C29-30	7.5' x 5' Concrete Box	93	LF	685.13	63,717	
N30	C30-30A	8' x 5' Concrete Box	338	LF	724.39	244,844	
N30A	C30A-30B	(2) 42" RCP (1 exists)	111	LF	111.72	12,401	
N30B	C30B-31	No Improvements Recommended	1,228	LF	NA	0	
N27	C27-25B	No Improvements Recommended	234	LF	NA	0	
N28	C28-28A	No Improvements Recommended	65	LF	NA	0	
N28A	C28A-30	24" RCP	84	LF	65.55	5,506	
N31	C31-31A	6.5' x 4' Concrete Box	230	LF	537.18	123,551	
N31A	C31A-32	No Improvements Recommended	1,121	LF	NA	0	
N32	C32-3	No Improvements Recommended	30	LF	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
4	N118	C118-118A	48" RCP	303	LF	158.54	48,038
	N118	C118-118A	4' x 3.5' Concrete Box Culvert	303	LF	342.65	103,823
	N118A	C118-34	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N119	C119-119A	Flood warning system	1	EA	10000.00	10,000

	N119A	C119A-118	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
	N33	C33-C33A	4.5' x 4' Concrete Box	45	LF	403.84	18,173	
	N33A	C33A-4	No Improvements Recommended at this Time. Area should be reevaluated when this area is developed or changed.	1,067	NA	NA	0	
	N34	C34-C34A	5' x 3.5' Concrete Box	944	LF	403.84	381,225	
	N34A	C34A-C33	No Improvements Recommended	1,190	NA	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost	
5	N120	C120-120A	5.5' x 4' Concrete Box Culvert	340	LF	468.69	159,355	
	N120A	C120A-36	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
	N121	C121-121A	21" RCP	424	LF	52.53	22,273	
	N121A	C121A-120	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
	N122	C122-122A	54" RCP	490	LF	197.26	96,657	
	N122	C122-122A	4' x 3' Concrete Box Culvert	490	LF	313.42	153,576	
	N122A	C122A-120	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
	N36	C36-5	6' x 4' Concrete Box Culvert	1,504	LF	502.48	755,730	
	N37	C37-120	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
	Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
	6	N123	C123-123A	(2) 48" RCP (1 Exists)	772	LF	158.54	122,393
N123		C123-123A	5' X 5' Concrete Box Culvert	772	LF	502.48	387,915	
N123A		C123A-38	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
N124		C124-124A	42" RCP	422	LF	111.72	47,146	

	N124A	C124A-123	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N125	C125-125A	48" RCP	510	LF	158.54	80,855
	N125A	C125A-123	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N38	C38-38A	66" RCP	82	LF	293.92	24,101
	N38	C38-38A	5' X 5' Concrete Box Culvert	82	LF	502.48	41,203
	N38A	C38A-6	No Improvements Recommended at this Time. Area should be reevaluated when this area is developed or changed.	3,887	LF	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
7	N107	C107-7	NA - Dummy Conduit	1	NA	NA	0
	N52	C52-107	No Improvements Recommended	51	LF	NA	0
	N53	C53-53A	No Improvements Recommended	53	LF	NA	0
	N53A	C53A-107	No Improvements Recommended	1,962	LF	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
8	N102	C102-8	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
9	N101	C101-9	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
10	N100	C100-10	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
11	N99	C99-11	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
12	N59	C59-12	No Improvements Recommended at this Time. Area should be reevaluated if basin 119 does not provide adequate storage and/or if basin 119 or basin 120 is changed.	185	LF	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost

13	N62	C62-13	No Improvements Recommended	200	LF	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost	
14	N63	C63-14	No Improvements Recommended	200	LF	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost	
15	N35	C35-15	NA - Dummy Conduit	1	NA	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost	
16	N106	C106-108	NA - Dummy Conduit	1	NA	NA	0	
	N108	C108-16	NA - Dummy Conduit	1	NA	NA	0	
	N65	C65-65A	(2) 54" RCP (1 Exists)	272	LF	197.26	53,655	
	N65A	C65A-108	NA - Conveyance used to simulate overland flow.	3,681	LF	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost	
17	N66	C66-17	NA - Dummy Conduit	1	NA	NA	0	
	N78	C78-78A	4.5'X4' Concrete Box Culvert	144	LF	NA	0	
	N78A	C78A-66	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
	N79	C79-79A	No Improvements Recommended	103	LF	NA	0	
	N79A	C79A-144	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
	N144	C144-144A	4.5'X4' Concrete Box Culvert	201	LF	NA	0	
	N144A	C144A-78	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
	Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
	18	N80	C80-80A	(3) 30" RCP @ 0.5%	368	LF	260.40	95,827
N80A		C80A-106	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
N106		C106-106A	No Improvements Recommended	73	LF	NA	0	
N106A		C106A-67	Keep Maintained	320	LF	NA	0	

	N67	C67-67A	5.5' x 4' Concrete Box Culvert @ 0.5%	62	LF	468.69	29,059
	N67A	C67A-18	Regrade swale to have a slope of 0.5%.	164	LF	7.09	1,163
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
19	N68	C68-19	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
20	N145	C145-145A	No Improvements Recommended	206	LF	NA	0
	N145A	C145A-103	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N103	C103-97	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N39	C39-39A	No Improvements Recommended	130	LF	NA	0
	N39A	C39A-98A	No Improvements Recommended	338	LF	NA	0
	N40	C40-40A	7.5' x 4' Concrete Box Culverts	57	LF	609.33	34,732
	N40A	C40A-39	No Improvements Recommended	1,806	LF	NA	0
	N41	C41-41A	7.5' x 4' Concrete Box Culvert	45	LF	609.33	27,420
	N41A	C41A-40	No Improvements Recommended	705	LF	NA	0
	N42	C42-41	No Improvements Recommended	1,588	LF	NA	0
	N43	C43-43A	No Improvements Recommended	42	LF	NA	0
	N43A	C43A-42	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	894	LF	NA	0
	N44	C44-44A	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	71	LF	NA	0
	N44A	C44A-43	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	1,060	LF	NA	0
	N45	C45-44	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	3,265	LF	NA	0

N46	C46-46A	No Improvements Recommended	48	LF	NA	0
N46A	C46A-45	Rectangular Concrete Channel (b=9.5',d=2')	450	SY	49.50	22,275
		Excavation for concrete channel	45	CY	7.71	346
N46A	C46A-45	Rectangular Concrete Channel (b=7.5',d=2.5')	383	SY	49.50	18,975
		Excavation for concrete channel	56	CY	7.71	432
N46A	C46A-45	(2) 7' x 2' Concrete Box Culvert	300	LF	871.62	261,486
N46A	C46A-45	9.5' x 2.5' Concrete Box Culvert	300	LF	646.77	194,031
N46A	C46A-45	7.5' x 3' Concrete Box Culvert	300	LF	537.18	161,154
N47	C47-46	No Improvements Recommended	230	LF	NA	0
N48	C48-47	No Improvements Recommended	1,012	LF	NA	0
N49	C49-48	No Improvements Recommended	195	LF	NA	0
N50	C50-49	No Improvements Recommended	103	LF	NA	0
N147	C147-147A	No Improvements Recommended	341	LF	NA	0
N147A	C147-69	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N69	C69-98	NA - Six Mile Creek	1	NA	NA	0
N70	C70-70A	(3) 36" RCP	192	LF	297.78	57,174
N70A	C70A-69	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N71	C71-71A	(2) 48" RCP	208	LF	317.08	65,953
		5' x 4' Concrete Box Culvert	208	LF	435.81	90,648
N71A	C71A-70	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N72	C72-72A	No Improvements Recommended	185	LF	NA	0
N72A	C72A-71	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N73	C73-73A	42" RCP	165	LF	111.72	18,434
N73A	C73A-72	NA - Conveyance used to simulate overland flow.	1	NA	NA	0

N74	C74-74A	No Improvements Recommended	97	LF	NA	0	
N74A	C74A-72	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
N75	C75-97	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
N76	C76-76A	(2) 36" CMP	176	LF	198.52	34,940	
N76A	C76A-42	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	2,294	LF	NA	0	
N77	C77-77A	15" RCP	86	LF	32.92	2,831	
N77A	C77A-41	No Improvements Recommended	2,573	LF	NA	0	
N81	C81-92	NA - Six Mile Creek	1	NA	NA	0	
N85	C85-85A	21" RCP	54	LF	52.53	2,837	
N85A	C85A-92	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
N86	C86-86A	27" RCP	196	LF	76.18	14,931	
N86A	C86A-92	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
N92	C92-20	NA - Six Mile Creek	1	NA	NA	0	
N94	C94-92	NA - Six Mile Creek	1	NA	NA	0	
N95	C95-94	NA - Six Mile Creek	1	NA	NA	0	
N96	C96-96A	NA - Six Mile Creek	1	NA	NA	0	
N96A	C96A-95	NA - Six Mile Creek	1	NA	NA	0	
N97	C97-81	NA - Six Mile Creek	1	NA	NA	0	
N98	C98-81	NA - Six Mile Creek	1	NA	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
21	N109	C109-21	NA - Dummy Conduit	1	NA	NA	0

	N82	C82-109	NA - Dummy Conduit	1	NA	NA	0
	N83	C83-109	NA - Dummy Conduit	1	NA	NA	0
	N84	C84-109	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
22	N105	C105-110	NA - Dummy Conduit	1	NA	NA	0
	N110	C110-22	NA - Dummy Conduit	1	NA	NA	0
	N90	C90-110	NA - Dummy Conduit	1	NA	NA	0
	N91	C91-110	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
23	N87	C87-23	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
24	N88	C88-24	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
25	N89	C89-25	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
26	N104	C104-26	NA - Dummy Conduit	1	NA	NA	0
	N136	C136-136A	No Improvements Recommended	129	LF	NA	0
	N136A	C136A-104	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
27	N93	C93-27	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
28	N64	C64-28	No Improvements Recommended	194	LF	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
S56	N55	C55-55A	4' x 2.5' Concrete Box Culvert	63	LF	285.10	17,961

	N55A	C55A-56	NA - Dummy Conduit	1	NA	NA	0
	N56	C56-S56	NA - Dummy Conduit	1	NA	NA	0
	S56	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	NA	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
S57	N57	C57-S57	NA - Dummy Conduit	1	NA	NA	0
	S57	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	NA	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
S58	N58	C58-S58	NA - Dummy Conduit	1	NA	NA	0
	S58	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	NA	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
S60	N60	C60-S60	NA - Dummy Conduit	1	NA	NA	0
	S60	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	NA	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
S61	N61	C61-S61	NA - Dummy Conduit	1	NA	NA	0
	S61	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	NA	NA	NA	0

Area	Upstream Node	Conduit	Recommended Improvement 5-yr	Quantity	Unit	Unit Cost	Item Cost
S138	N138	C138-138	NA - Dummy Conduit	1	NA	NA	0
	S138	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	NA	NA	NA	0
	N64*	C64-28	6' x 4' Concrete Box Culvert	194	LF	502.48	97,481

5-Year Contingency Costs

Area	Recommended Improvement Cost	Contingency	Contingency Unit	Contingency Unit Cost (\$)	Contingency Cost (\$)
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1	1,508,731	Construction Management	LS	8% of total cost	120,698
		Contingency	LS	10% of total cost	150,873
		Design and Permitting	LS	10% of total cost	150,873
		Mobilization/Demobilization	LS	5% of total cost	75,437
		Site Preparation	LS	10% of total cost	150,873
		Erosion & Sediment Control	LS	5% of total cost	75,437
		Incidentals	LS	20% of total cost	301,746
2	3,247,896	Construction Management	LS	8% of total cost	259,832
		Contingency	LS	10% of total cost	324,790
		Design and Permitting	LS	10% of total cost	324,790
		Mobilization/Demobilization	LS	5% of total cost	162,395
		Site Preparation	LS	10% of total cost	324,790
		Erosion & Sediment Control	LS	5% of total cost	162,395
		Incidentals	LS	20% of total cost	649,579
3	1,123,787	Construction Management	LS	8% of total cost	89,903
		Contingency	LS	10% of total cost	112,379
		Design and Permitting	LS	10% of total cost	112,379
		Mobilization/Demobilization	LS	5% of total cost	56,189
		Site Preparation	LS	10% of total cost	112,379
		Erosion & Sediment Control	LS	5% of total cost	56,189
		Incidentals	LS	20% of total cost	224,757
4	457,435	Construction Management	LS	8% of total cost	36,595
		Contingency	LS	10% of total cost	45,744
		Design and Permitting	LS	10% of total cost	45,744
		Mobilization/Demobilization	LS	5% of total cost	22,872
		Site Preparation	LS	10% of total cost	45,744
		Erosion & Sediment Control	LS	5% of total cost	22,872
		Incidentals	LS	20% of total cost	91,487
5	1,034,015	Construction Management	LS	8% of total cost	82,721
		Contingency	LS	10% of total cost	103,401
		Design and Permitting	LS	10% of total cost	103,401
		Mobilization/Demobilization	LS	5% of total cost	51,701
		Site Preparation	LS	10% of total cost	103,401
		Erosion & Sediment Control	LS	5% of total cost	51,701
		Incidentals	LS	20% of total cost	206,803
6	274,496	Construction Management	LS	8% of total cost	21,960

		Contingency	LS	10% of total cost	27,450
		Design and Permitting	LS	10% of total cost	27,450
		Mobilization/Demobilization	LS	5% of total cost	13,725
		Site Preparation	LS	10% of total cost	27,450
		Erosion & Sediment Control	LS	5% of total cost	13,725
		Incidentals	LS	20% of total cost	54,899
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
16	53,655	Construction Management	LS	8% of total cost	4,292
		Contingency	LS	10% of total cost	5,365
		Design and Permitting	LS	10% of total cost	5,365
		Mobilization/Demobilization	LS	5% of total cost	2,683
		Site Preparation	LS	10% of total cost	5,365
		Erosion & Sediment Control	LS	5% of total cost	2,683
		Incidentals	LS	20% of total cost	10,731
17	0				
18	126,049	Construction Management	LS	8% of total cost	10,084
		Contingency	LS	10% of total cost	12,605
		Design and Permitting	LS	10% of total cost	12,605
		Mobilization/Demobilization	LS	5% of total cost	6,302
		Site Preparation	LS	10% of total cost	12,605
		Erosion & Sediment Control	LS	5% of total cost	6,302

		Incidentals	LS	20% of total cost	25,210
27	0				
20*	3,171,604	Construction Management	LS	8% of total cost	253,728
		Contingency	LS	10% of total cost	317,160
		Design and Permitting	LS	10% of total cost	317,160
		Mobilization/Demobilization	LS	5% of total cost	158,580
		Site Preparation	LS	10% of total cost	317,160
		Erosion & Sediment Control	LS	5% of total cost	158,580
		Incidentals	LS	20% of total cost	634,321
21	0				
22	0				
23	0				
24	0				
25	0				
26	0				
27	0				
28	0				
28**	97,481	Construction Management	LS	8% of total cost	7,798
		Contingency	LS	10% of total cost	9,748
		Design and Permitting	LS	10% of total cost	9,748
		Mobilization/Demobilization	LS	5% of total cost	4,874
		Site Preparation	LS	10% of total cost	9,748
		Erosion & Sediment Control	LS	5% of total cost	4,874
		Incidentals	LS	20% of total cost	19,496
S56	17,961	Construction Management	LS	8% of total cost	1,437
		Contingency	LS	10% of total cost	1,796
		Design and Permitting	LS	10% of total cost	1,796
		Mobilization/Demobilization	LS	5% of total cost	898
		Site Preparation	LS	10% of total cost	1,796

		Erosion & Sediment Control	LS	5% of total cost	898
		Incidentals	LS	20% of total cost	3,592
S57	0				
S58	0				
S60	0				
S61	0				
S138	0				
S138**	97,481	Construction Management	LS	8% of total cost	7,798
		Contingency	LS	10% of total cost	9,748
		Design and Permitting	LS	10% of total cost	9,748
		Mobilization/Demobilization	LS	5% of total cost	4,874
		Site Preparation	LS	10% of total cost	9,748
		Erosion & Sediment Control	LS	5% of total cost	4,874
		Incidentals	LS	20% of total cost	19,496

* This cost includes the costs for Areas 3-6

** This cost applies if S138 does not have adequate storage. It was included in the total cost.

Recommended Capital Improvement Costs by Area 100-Year

Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
1	N5A	C5A-10	(2) 8' x 4' Concrete Box Culvert	786	LF	1,293.54	1,016,722
	N5A	C5A-10	Detention Pond (PS3)	72,864	CY	4.00	291,456
	N5A	C5A-10	(2) 9' x 4' concrete box outlet structure with a16' x 4' Orifice	70	LF	1,448.78	101,415
	N10	C10-10A	Grass Channel (b=30' d=4' z=4:1)	208,196	SF	0.33	68,705
			Excavation for grass channel	7,963	CY	7.71	61,396
	N10	C10-10A	Concrete Channel (b =10', d=4' z=4:1)	15,671	SY	49.50	775,698
			Excavation for concrete channel	7,962	CY	7.71	61,384
	N10A	C10A-1	(2) 7' x 4' Concrete Box Culverts	30	LF	1,145.60	34,368
	N111	C111-111A	9.5' x 4' Concrete Box Culvert	46	LF	764.57	35,170
	N111A	C111A-7	Concrete Channel (b=12', d=2.5', z=1:1)	635	SY	49.50	31,416
			Excavation for concrete channel	78	CY	7.71	605
	N112	C112-111	54" RCP	344	LF	197.26	67,857
	N112	C112-111	4.5' x 4' Concrete Box Culvert	344	LF	403.84	138,921
	N126	C126-126A	54" RCP	57	LF	197.26	11,244
	N126	C126-126A	4' x 4' Concrete Box Culvert	57	LF	372.79	21,249
	N126A	C126A-8	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N127A	C127A-128	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N128	C128-128A	(2) 6.5' x 4' Concrete Box Culverts	132	LF	1,074.36	141,816
	N128	C128-128A	(1) 11' x 4' Concrete Box Culvert	132	LF	890.58	117,557
	N128A	C128A-3	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N129	C129-129A	48" RCP	362	LF	158.54	57,391
	N129A	C129A-128	(2) 6.5' x 4' Concrete Box Culverts	262	LF	1,074.36	281,482
	N130	C130-130A	30" RCP	68	LF	86.80	5,902
	N130A	C130A-137A	30" RCP	722	LF	86.80	62,670

N131	C131-131A	36" RCP	70	LF	99.26	6,948
N131A	C131A-111	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
N132	C132-132A	6.5' x 4' Concrete Box Culvert	55	LF	537.18	29,545
N132A	C132A-112	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
N137	C137-137A	36" RCP	107	LF	99.26	10,621
N137A	C137A-132	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
N139	C139-5	NA -Conveyance used to simulate overland flow.	1	NA	NA	0
N3	C3-1	Grass Channel (b=4.3', d=4', z=4:1)	102,765	SF	0.33	33,913
		Excavation for grass channel	6,712	CY	7.71	51,750
N7	C7-7A	10' x 4' Concrete Box Culvert at 0.5%	177	LF	847.88	150,075
N7A	C7A-6	Concrete Channel (b=16', d=2.5', z=1:1) at 0.5%	1,594	SY	49.50	78,887
		Excavation for concrete channel	159	CY	7.71	1,226
N6	C6-6A	(2) 7' x 4' Concrete Box Culvert at 0.5%	65	LF	1,145.60	74,464
N6A	C6A-5	Concrete Channel (b=17, d=2.5, z=1:1)	1,076	SY	49.50	53,240
N6A	C6A-5	(2) 7' x 4' Concrete Box Culvert at 0.5%	440	LF	1,145.60	504,064
N5	C5-5A	(2)8' x 4' Concrete Box Culvert at 0.5%	110	LF	1,293.54	142,289
N8	C8-8A	9.5' x 4' Concrete Box Culvert	81	LF	764.57	61,930
N8A	C8A-127A	Use existing swale	60	LF	NA	0
N8A	C8A-127A	Extend 9.5' x 4' Concrete Box Culvert	60	LF	764.57	45,874
N8A	C8A-127A	Detention pond (PS2)	11,052	CY	4.00	44,208
N8A	C8A-127A	6.5' x 4' concrete box outlet structure with a 6.3' x 4' Orifice	20	LF	537.18	10,744
N9	C9-10	Grass Channel (b=16', d=4', z=4:1)	16,224	SF	0.33	5,354
N9	C9-10	Concrete Channel (b=5', d=4' z=3:1)	1,089	SY	49.50	53,911
		Excavation for concrete channel	602	CY	7.71	4,643

Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
2	N11	C11-2	(2) 8.5' x 4' Concrete Box Culverts	59	LF	1,370.26	80,845
	N12	C12-12A	9'x4' Concrete Box Culvert	42	LF	724.39	30,424
	N12A	C12A-11	Grass Channel (b=34.7', d=4' z=4:1)	219,710	SF	0.33	72,504
			Excavation for grass channel	7,812	CY	7.71	60,229
	N12A	C12A-11	Concrete Channel (b=11.7', d=4' z=4:1)	15,994	SY	49.50	791,713
			Excavation for concrete channel	7,810	CY	7.71	60,215
	N13	C13-12	Grass Channel (b=21', d=4', z=4:1)	135,627	SF	0.33	44,757
			Excavation for grass channel	6,069	CY	7.71	46,788
	N13	C13-12	Concrete Channel (b=4.7', d=4' z=4:1)	10,435	SY	49.50	516,534
			Excavation for concrete channel	6,067	CY	7.71	46,779
	N133	C133-15	6' x 4' Concrete Box Culvert	1,614	LF	502.48	811,003
	N134	C134-133	54" RCP	566	LF	197.26	111,649
	N135	C135-134	48" RCP	639	LF	158.54	101,307
	N14	C14-14A	(2) 24" RCP (1 EXISTS)	38	LF	65.55	2,491
	N142	C142-2	(2) 24" RCP (1 EXISTS)	44	LF	65.55	2,884
	N14A	C14A-12	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N15	C15-N2	6' x 4' Concrete Box Culvert	184	LF	502.48	92,456
	N15	C15-N2	Detention Pond (PS5)	5,786	CY	4.00	23,144
	N15	C15-N2	4' x 3.5' concrete box outlet structure with a 3.4' x 3' Orifice	100	LF	342.65	34,265
	N15	C15-N2	Detention Pond (PS6)	14,121	CY	4.00	56,484
	N15	C15-N2	11.5' x 4' Concrete Box Culvert Outlet with a 4' x 10.5' Orifice	106	LF	934.41	99,047
	N15	C15-N2	Detention Pond (PS7)	36,330	CY	4.00	145,320
	N15	C15-N2	11.5' x 4' Concrete Box Culvert Outlet with a 11.1' x 4' Orifice	1,532	LF	934.41	1,431,516
	N15	C15-N2	Detention Pond (PS4)	37,814	CY	4.00	151,256
	N15	C15-N2	12' x 4' Concrete Box Culvert Outlet with a 11.9' x 4' Orifice	70	LF	979.15	68,541
	N16	C16-16A	No Improvements Recommended	130	NA	NA	0

N16A	C16A-18	Concrete Channel (b=6',d=2.5',z=2:1)	1,102	SY	49.50	54,560	
		Excavation for concrete channel	288	CY	7.71	2,217	
N17	C17-17A	No Improvements Recommended	53	NA	NA	0	
N17A	C17A-11	NA - Conveyance used to simulate overland flow.	2,256	NA	NA	0	
N18	C18-C18A	No Improvements Recommended	120	NA	NA	0	
N18A	C18A-54	Grass Channel (b=7', d=4', z=3:1)	42,036	SF	0.33	13,872	
N18A	C18A-54	(2) 7' x 4' Concrete Box Culverts	1,450	LF	1,145.60	1,661,120	
N19	C19-13	No Improvements Recommended	196	NA	NA	0	
N20	C20-C20A	No Improvements Recommended	51	NA	NA	0	
N20A	C20A-12	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
N21	C21-21A	No Improvements Recommended	48	LF	NA	0	
N21A	C21A-20	NA - Conveyance used to simulate overland flow.	1	NA	NA	0	
N2	C2-13	12' x 4' Concrete Box Culverts	75	LF	979.15	73,436	
S17	S17-16	Needs to be reevaluated to determine adequacy.	1	NA	NA	0	
S17E	S17E-S17	No Improvements Recommended	1	NA	NA	0	
S17W	S17W-S17E	Needs to be reevaluated to determine adequacy.	1	NA	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
3	N146	C146-146A	No Improvements Recommended	247	LF	NA	0
	N146A	C146A-114	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N113	C113-23	7' x 4' Concrete Box Culvert	710	LF	572.80	406,688
	N114	C114-113	36" RCP	865	LF	99.26	85,860

N115	C115-113	7' x 2.5' Concrete Box Culvert	843	LF	468.69	395,106	
N116	C116-116A	36" RCP	333	LF	99.26	33,054	
N116A	C116A-115	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
N117	C117-117A	42" RCP	178	LF	111.72	19,886	
N117A	C117A-115	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0	
N23	C23-25	No Improvements Recommended	513	NA	NA	0	
N25	C25-26A	6.5' x 5' Concrete Box Culvert	402	LF	609.33	244,951	
N25	C25-26A	Detention Pond (PS1)	10,525	CY	4.00	42,100	
N25	C25-26A	7' x 4.5' concrete box outlet structure with a 5.7' x 4.3' Orifice	56	LF	609.33	34,122	
N26A	C26A-29	7' x 4.5' Concrete Box Culvert	174	LF	609.33	106,023	
N29	C29-30	7.5' x 5' Concrete Box Culvert	93	LF	685.13	63,717	
N30	C30-30A	8' x 5' Concrete Box Culvert	338	LF	724.39	244,844	
N30A	C30A-30B	8' x 5' Concrete Box Culvert	111	LF	724.39	80,407	
N30B	C30B-31	No Improvements Recommended	1,228	LF	NA	0	
N27	C27-25B	No Improvements Recommended (currently (1) 24" RCP)	234	LF	NA	0	
N28	C28-28A	(2) 24" RCP (1 Exists)	65	LF	65.55	4,261	
N28A	C28A-30	(2) 24" RCP	84	LF	131.10	11,012	
N31	C31-31A	(2) 8' x 5' Concrete Box	230	LF	1,448.78	333,219	
N31A	C31A-32	No Improvements Recommended	1,121	LF	NA	0	
N32	C32-3	No Improvements Recommended	30	NA	NA	0	
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
4	N118	C118-118A	60" RCP	303	LF	242.63	73,517

	N118A	C118-34	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N119	C119-119A	Flood warning system	1	EA	10,000.00	10,000
	N119A	C119A-118	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N33	C33-C33A	7' x 4' Concrete Box	45	LF	572.80	25,776
	N33A	C33A-4	No Improvements Recommended at this Time. Area should be reevaluated when this area is developed or changed.	1,067	NA	NA	0
	N34	C34-C34A	8.5' x 3.5' Concrete Box	944	LF	646.77	610,551
	N34A	C34A-C33	No Improvements Recommended	1,190	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
5	N120	C120-120A	7' x 5' Concrete Box Culvert	340	LF	646.77	219,902
	N120A	C120A-36	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N121	C121-121A	30" RCP	424	LF	86.80	36,803
	N121A	C121A-120	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N122	C122-122A	60" RCP	490	LF	242.63	118,889
	N122A	C122A-120	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N36	C36-5	8' x 5' Concrete Box Culvert	1,504	LF	724.39	1,089,483
	N37	C37-120	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
6	N123	C123-123A	7.5' X 4' Concrete Box Culvert	772	LF	609.33	470,403
	N123A	C123A-38	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N124	C124-124A	54" RCP	422	LF	197.26	83,244

	N124A	C124A-123	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N125	C125-125A	48" RCP	510	LF	158.54	80,855
	N125A	C125A-123	NA - Pipe system modeled as an equivalent conveyance. Area should be evaluated more closely in the future.	1	NA	NA	0
	N38	C38-38A	(2) 60" RCP (1 Exists)	82	LF	242.63	19,896
	N38	C38-38A	7' X 5' Concrete Box Culvert	82	LF	646.77	53,035
	N38A	C38A-6	No Improvements Recommended at this Time. Area should be reevaluated when this area is developed or changed.	3,887	LF	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
7	N107	C107-7	NA - Dummy Conduit	1	NA	NA	0
	N52	C52-107	No Improvements Recommended	51	LF	NA	0
	N53	C53-53A	24" RCP (Currently (1) 18" RCP)	53	LF	65.55	3,474
	N53A	C53A-107	No Improvements Recommended	1,962	LF	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
8	N102	C102-8	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
9	N101	C101-9	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
10	N100	C100-10	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
11	N99	C99-11	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
12	N59	C59-12	No Improvements Recommended at this Time. Area should be reevaluated if basin 119 does not provide adequate storage and/or if basin 119 or basin 120 is changed.	185	LF	NA	0

Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
13	N62	C62-13	(2) 48" RCP (1 Exists)	200	LF	158.54	31,708
14	N63	C63-14	No Improvements Recommended	200	LF	NA	0
15	N35	C35-15	NA - Dummy Conduit	1	NA	NA	0
16	N106	C106-108	NA - Dummy Conduit	1	NA	NA	0
	N108	C108-16	NA - Dummy Conduit	1	NA	NA	0
	N65	C65-65A	(2) 6.5' x 4' Concrete Box Culvert	272	LF	1,074.36	292,226
	N65A	C65A-108	NA - Conveyance used to simulate overland flow.	3,681	NA	NA	0
17	N66	C66-17	NA - Dummy Conduit	1	NA	NA	0
	N78	C78-78A	4.5'X4' Concrete Box Culvert	144	LF	403.84	58,153
	N78A	C78A-66	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N79	C79-79A	No Improvements Recommended	103	NA	NA	0
	N79A	C79A-144	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N144	C144-144A	4.5'X4' Concrete Box Culvert	201	LF	403.84	81,172
	N144A	C144A-78	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	18	N80	C80-80A	5'x4' Concrete Box Culvert @ 0.5%	368	LF	435.81

	N80A	C80A-106	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N106	C106-106A	5.5'x4' Concrete Box Culvert	73	LF	468.69	34,214
	N106A	C106A-67	Keep Maintained	320	LF	NA	0
	N67	C67-67A	10'x4' Concrete Box Culvert @ 0.5%	62	LF	847.88	52,569
	N67A	C67A-18	Regrade swale to have a slope of 0.5%.	164	LF	7.09	1,163
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
19	N68	C68-19	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
20	N145	C145-145A	30" RCP	206	LF	86.80	17,881
	N145A	C145A-103	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N103	C103-97	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
	N39	C39-39A	8' x 4' Concrete Box Culvert	130	LF	646.77	84,080
	N39A	C39A-98A	No Improvements Recommended	338	NA	NA	0
	N40	C40-40A	(2) 7.5' x 4' Concrete Box Culverts	57	LF	1,218.66	69,464
	N40A	C40A-39	Grass Swale (b= 12', d= 4.5', z = 4:1)	86,688	SF	0.33	28,607
			Excavation for grass channel	5,421	CY	7.71	41,792
	N40A	C40A-39	Concrete Channel (b= 8' d= 3.6' z=4:1)	7,385	SY	49.50	365,534
			Excavation for concrete channel	3,469	CY	7.71	26,746
	N41	C41-41A	(2) 7.5' x 4' Concrete Box Culverts	45	LF	1,218.66	54,840
	N41A	C41A-40	Grass Swale (b= 9', d= 4', z = 4:1)	28,905	SF	0.33	9,539
			Excavation for grass channel	1,673	CY	7.71	12,899
	N41A	C41A-40	Concrete Channel (b= 4' d= 3.4', z=4:1)	2,444	SY	49.50	120,978
		Excavation for concrete channel	1,208	CY	7.71	9,317	
N42	C42-41	No Improvements Recommended	1,588	NA	NA	0	

N43	C43-43A	10.5 x 5' Concrete Box Culvert at 0.5%	42	LF	934.41	39,245
N43A	C43A-42	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	894	NA	NA	0
N44	C44-44A	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	71	NA	NA	0
N44A	C44A-43	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	1,060	NA	NA	0
N45	C45-44	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	3,265	NA	NA	0
N46	C46-46A	No Improvements Recommended	48	NA	NA	0
N46A	C46A-45	(2) 7.5' x 3' Concrete Box Culverts	300	LF	1,074.36	322,308
N47	C47-46	No Improvements Recommended	230	NA	NA	0
N48	C48-47	No Improvements Recommended	1,012	NA	NA	0
N49	C49-48	No Improvements Recommended	195	NA	NA	0
N50	C50-49	No Improvements Recommended	103	NA	NA	0
N147	C147-147A	No Improvements Recommended	341	LF	NA	0
N147A	C147-69	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N69	C69-98	NA - Six Mile Creek	1	NA	NA	0
N70	C70-70A	60" RCP	192	LF	242.63	46,585
N70A	C70A-69	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N71	C71-71A	(2) 60" RCP	208	LF	485.26	100,934
N71A	C71A-70	NA - Conveyance used to simulate overland flow.	1	NA	NA	0

N72	C72-72A	60" RCP	185	LF	242.63	44,887
N72A	C72A-71	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N73	C73-73A	54" RCP	165	LF	197.26	32,548
N73A	C73A-72	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N74	C74-74A	No Improvements Recommended	97	LF	NA	0
N74A	C74A-72	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N75	C75-97	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N76	C76-76A	48" RCP (currently (1) 36" CMP)	176	LF	158.54	27,903
N76A	C76A-42	No improvements recommended. If zoning changes or if area is developed existing should be reevaluated.	2,294	NA	NA	0
N77	C77-77A	24" RCP	86	LF	65.55	5,637
N77A	C77A-41	No Improvements Recommended	2,573	NA	NA	0
N81	C81-92	NA - Six Mile Creek	1	NA	NA	0
N85	C85-85A	30" RCP	54	LF	86.80	4,687
N85A	C85A-92	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N86	C86-86A	30" RCP	196	LF	86.80	17,013
N86A	C86A-92	NA - Conveyance used to simulate overland flow.	1	NA	NA	0
N92	C92-20	NA - Six Mile Creek	1	NA	NA	0
N94	C94-92	NA - Six Mile Creek	1	NA	NA	0
N95	C95-94	NA - Six Mile Creek	1	NA	NA	0
N96	C96-96A	NA - Six Mile Creek	212	NA	NA	0
N96A	C96A-95	NA - Six Mile Creek	1	NA	NA	0

	N97	C97-81	NA - Six Mile Creek	1	NA	NA	0
	N98	C98-81	NA - Six Mile Creek	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
21	N109	C109-21	NA - Dummy Conduit	1	NA	NA	0
	N82	C82-109	NA - Dummy Conduit	1	NA	NA	0
	N83	C83-109	NA - Dummy Conduit	1	NA	NA	0
	N84	C84-109	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
22	N105	C105-110	NA - Dummy Conduit	1	NA	NA	0
	N110	C110-22	NA - Dummy Conduit	1	NA	NA	0
	N90	C90-110	NA - Dummy Conduit	1	NA	NA	0
	N91	C91-110	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
23	N87	C87-23	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
24	N88	C88-24	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
25	N89	C89-25	NA - Dummy Conduit	1	NA	NA	0
Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
26	N104	C104-26	NA - Dummy Conduit	1	NA	NA	0
	N136	C136-136A	No Improvements Recommended	129	LF	NA	0

Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
	N136A	C136A-104	NA - Dummy Conduit	1	NA	NA	0
27	N93	C93-27	NA - Dummy Conduit	1	NA	NA	0
28	N64	C64-28	No Improvements Recommended	194	LF	NA	0
S56	N55	C55-55A	5.5'x3' Concrete Box Culvert	63	LF	403.84	25,442
	N55A	C55A-56	NA - Dummy Conduit	1	NA	NA	0
	N56	C56-S56	NA - Dummy Conduit	1	NA	NA	0
	S56	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	1	NA	NA	0
S57	N57	C57-S57	NA - Dummy Conduit	1	NA	NA	0
	S57	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	1	NA	NA	0
S58	N58	C58-S58	NA - Dummy Conduit	1	NA	NA	0
	S58	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	1	NA	NA	0
S60	N60	C60-S60	NA - Dummy Conduit	1	NA	NA	0

Area	Upstream Node	Conduit	Recommended Improvement 100-yr	Quantity	Unit	Unit Cost (\$)	Item Cost
	S60	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	1	NA	NA	0
S61	N61	C61-S61	NA - Dummy Conduit	1	NA	NA	0
	S61	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	1	NA	NA	0
S138	N138	C138-138	NA - Dummy Conduit	1	NA	NA	0
	S138	-	Existing storage facility needs to be analyzed to determine if it has adequate storage. If it does not have adequate storage, it should either be enlarged or a spillway and safe overflow path should be constructed.	1	NA	NA	0
	N64*	C64-28	8' x 4.5' Concrete Box Culvert	194	LF	685.13	132,915

100-Year Contingency Costs

Area	Recommended Improvement Cost	Contingency	Contingency Unit	Contingency Unit Cost	Contingency Cost
1	4,748,108	Construction Management	LS	8% of total cost	379,849
		Contingency	LS	10% of total cost	474,811
		Design and Permitting	LS	10% of total cost	474,811
		Mobilization/Demobilization	LS	5% of total cost	237,405
		Site Preparation	LS	10% of total cost	474,811
		Erosion & Sediment Control	LS	5% of total cost	237,405
		Incidentals	LS	20% of total cost	949,622
2	6,687,358	Construction Management	LS	8% of total cost	534,989
		Contingency	LS	10% of total cost	668,736
		Design and Permitting	LS	10% of total cost	668,736
		Mobilization/Demobilization	LS	5% of total cost	334,368
		Site Preparation	LS	10% of total cost	668,736
		Erosion & Sediment Control	LS	5% of total cost	334,368
		Incidentals	LS	20% of total cost	1,337,472
3	2,105,251	Construction Management	LS	8% of total cost	168,420
		Contingency	LS	10% of total cost	210,525
		Design and Permitting	LS	10% of total cost	210,525
		Mobilization/Demobilization	LS	5% of total cost	105,263
		Site Preparation	LS	10% of total cost	210,525
		Erosion & Sediment Control	LS	5% of total cost	105,263
		Incidentals	LS	20% of total cost	421,050
4	719,844	Construction Management	LS	8% of total cost	57,588
		Contingency	LS	10% of total cost	71,984
		Design and Permitting	LS	10% of total cost	71,984
		Mobilization/Demobilization	LS	5% of total cost	35,992
		Site Preparation	LS	10% of total cost	71,984
		Erosion & Sediment Control	LS	5% of total cost	35,992
		Incidentals	LS	20% of total cost	143,969
5	1,465,076	Construction Management	LS	8% of total cost	117,206
		Contingency	LS	10% of total cost	146,508
		Design and Permitting	LS	10% of total cost	146,508
		Mobilization/Demobilization	LS	5% of total cost	73,254
		Site Preparation	LS	10% of total cost	146,508
		Erosion & Sediment Control	LS	5% of total cost	73,254

		Incidentals	LS	20% of total cost	293,015
6	707,433	Construction Management	LS	8% of total cost	56,595
		Contingency	LS	10% of total cost	70,743
		Design and Permitting	LS	10% of total cost	70,743
		Mobilization/Demobilization	LS	5% of total cost	35,372
		Site Preparation	LS	10% of total cost	70,743
		Erosion & Sediment Control	LS	5% of total cost	35,372
		Incidentals	LS	20% of total cost	141,487
7	3,474	Construction Management	LS	8% of total cost	278
		Contingency	LS	10% of total cost	347
		Design and Permitting	LS	10% of total cost	347
		Mobilization/Demobilization	LS	5% of total cost	174
		Site Preparation	LS	10% of total cost	347
		Erosion & Sediment Control	LS	5% of total cost	174
		Incidentals	LS	20% of total cost	695
8	0				
9	0				
10	0				
11	0				
12	0				
13	31,708	Construction Management	LS	8% of total cost	2,537
		Contingency	LS	10% of total cost	3,171
		Design and Permitting	LS	10% of total cost	3,171
		Mobilization/Demobilization	LS	5% of total cost	1,585
		Site Preparation	LS	10% of total cost	3,171
		Erosion & Sediment Control	LS	5% of total cost	1,585
		Incidentals	LS	20% of total cost	6,342
14	0				
15	0				
16	292,226	Construction Management	LS	8% of total cost	23,378

		Contingency	LS	10% of total cost	29,223
		Design and Permitting	LS	10% of total cost	29,223
		Mobilization/Demobilization	LS	5% of total cost	14,611
		Site Preparation	LS	10% of total cost	29,223
		Erosion & Sediment Control	LS	5% of total cost	14,611
		Incidentals	LS	20% of total cost	58,445
17	139,325	Construction Management	LS	8% of total cost	11,146
		Contingency	LS	10% of total cost	13,932
		Design and Permitting	LS	10% of total cost	13,932
		Mobilization/Demobilization	LS	5% of total cost	6,966
		Site Preparation	LS	10% of total cost	13,932
		Erosion & Sediment Control	LS	5% of total cost	6,966
		Incidentals	LS	20% of total cost	27,865
18	248,324	Construction Management	LS	8% of total cost	19,866
		Contingency	LS	10% of total cost	24,832
		Design and Permitting	LS	10% of total cost	24,832
		Mobilization/Demobilization	LS	5% of total cost	12,416
		Site Preparation	LS	10% of total cost	24,832
		Erosion & Sediment Control	LS	5% of total cost	12,416
		Incidentals	LS	20% of total cost	49,665
19	0				
20*	6,481,027	Construction Management	LS	8% of total cost	518,482
		Contingency	LS	10% of total cost	648,103
		Design and Permitting	LS	10% of total cost	648,103
		Mobilization/Demobilization	LS	5% of total cost	324,051
		Site Preparation	LS	10% of total cost	648,103
		Erosion & Sediment Control	LS	5% of total cost	324,051
		Incidentals	LS	20% of total cost	1,296,205
21	0				
22	0				
23	0				
24	0				

25	0				
26	0				
27	0				
28	0				
28**	132,915	Construction Management	LS	8% of total cost	10,633
		Contingency	LS	10% of total cost	13,292
		Design and Permitting	LS	10% of total cost	13,292
		Mobilization/Demobilization	LS	5% of total cost	6,646
		Site Preparation	LS	10% of total cost	13,292
		Erosion & Sediment Control	LS	5% of total cost	6,646
		Incidentals	LS	20% of total cost	26,583
S56	25,442	Construction Management	LS	8% of total cost	2,035
		Contingency	LS	10% of total cost	2,544
		Design and Permitting	LS	10% of total cost	2,544
		Mobilization/Demobilization	LS	5% of total cost	1,272
		Site Preparation	LS	10% of total cost	2,544
		Erosion & Sediment Control	LS	5% of total cost	1,272
		Incidentals	LS	20% of total cost	5,088
S57	0				
S58	0				
S60	0				
S61	0				
S138	0				

S138**	132,915	Construction Management	LS	8% of total cost	10,633
		Contingency	LS	10% of total cost	13,292
		Design and Permitting	LS	10% of total cost	13,292
		Mobilization/Demobilization	LS	5% of total cost	6,646
		Site Preparation	LS	10% of total cost	13,292
		Erosion & Sediment Control	LS	5% of total cost	6,646
		Incidentals	LS	20% of total cost	26,583

* This cost includes the costs for Areas 3-6

** This cost applies if S138 does not have adequate storage. It was included in the total cost.

Unit Costs

Item	Unit	Unit Cost
15" RCP, FURNISH & INSTALL	LF	\$ 32.92
18" RCP, FURNISH & INSTALL	LF	\$ 39.50
21" RCP, FURNISH & INSTALL	LF	\$ 52.53
24" RCP, FURNISH & INSTALL	LF	\$ 65.55
27" RCP, FURNISH & INSTALL	LF	\$ 76.18
30" RCP, FURNISH & INSTALL	LF	\$ 86.80
36" RCP, FURNISH & INSTALL	LF	\$ 99.26
42" RCP, FURNISH & INSTALL	LF	\$ 111.72
48" RCP, FURNISH & INSTALL	LF	\$ 158.54
54" RCP, FURNISH & INSTALL	LF	\$ 197.26
60" RCP, FURNISH & INSTALL	LF	\$ 242.63
66" RCP, FURNISH & INSTALL	LF	\$ 293.92
72" RCP, FURNISH & INSTALL	LF	\$ 351.13
6.5' X 1.5' CBC, FURNISH & INSTALL	LF	\$ 372.79
4.5' X 2' CBC, FURNISH & INSTALL	LF	\$ 285.10
6' X 2' CBC, FURNISH & INSTALL	LF	\$ 372.79
7' X 2' CBC, FURNISH & INSTALL	LF	\$ 435.81
7.5' X 2' CBC, FURNISH & INSTALL	LF	\$ 468.69
8 X 2' CBC, FURNISH & INSTALL	LF	\$ 502.48
3' X 2.5' CBC, FURNISH & INSTALL	LF	\$ 231.20
4' X 2.5' CBC, FURNISH & INSTALL	LF	\$ 285.10
7' X 2.5' CBC, FURNISH & INSTALL	LF	\$ 468.69
9.5' X 2.5' CBC, FURNISH & INSTALL	LF	\$ 646.77
3.5' X 3' CBC, FURNISH & INSTALL	LF	\$ 285.10
3.5' X 3.5' CBC, FURNISH & INSTALL	LF	\$ 313.42
4' X 3' CBC, FURNISH & INSTALL	LF	\$ 313.42
5.5' X 3' CBC, FURNISH & INSTALL	LF	\$ 403.84
6.5' X 3' CBC, FURNISH & INSTALL	LF	\$ 468.69
7' X 3' CBC, FURNISH & INSTALL	LF	\$ 502.48
7.5' X 3' CBC, FURNISH & INSTALL	LF	\$ 537.18
8' X 3' CBC, FURNISH & INSTALL	LF	\$ 572.80
8.5' X 3' CBC, FURNISH & INSTALL	LF	\$ 609.33
10' X 3' CBC, FURNISH & INSTALL	LF	\$ 724.39
4' X 3.5' CBC, FURNISH & INSTALL	LF	\$ 342.65
4.5' X 3.5' CBC, FURNISH & INSTALL	LF	\$ 372.79
5' X 3.5' CBC, FURNISH & INSTALL	LF	\$ 403.84
6.5' X 3.5' CBC, FURNISH & INSTALL	LF	\$ 502.48
7' X 3.5' CBC, FURNISH & INSTALL	LF	\$ 537.18
8' X 3.5' CBC, FURNISH & INSTALL	LF	\$ 609.33

Item	Unit	Unit Cost
8.5' X 3.5' CBC, FURNISH & INSTALL	LF	\$ 646.77
12' X 3.5' CBC, FURNISH & INSTALL	LF	\$ 934.41
4' X 4' CBC, FURNISH & INSTALL	LF	\$ 372.79
4.5' X 4' CBC, FURNISH & INSTALL	LF	\$ 403.84
5' X 4' CBC, FURNISH & INSTALL	LF	\$ 435.81
5.5' X 4' CBC, FURNISH & INSTALL	LF	\$ 468.69
6' X 4' CBC, FURNISH & INSTALL	LF	\$ 502.48
6.5' X 4' CBC, FURNISH & INSTALL	LF	\$ 537.18
7' X 4' CBC, FURNISH & INSTALL	LF	\$ 572.80
7.5' X 4' CBC, FURNISH & INSTALL	LF	\$ 609.33
8' X 4' CBC, FURNISH & INSTALL	LF	\$ 646.77
8.5' X 4' CBC, FURNISH & INSTALL	LF	\$ 685.13
9' X 4' CBC, FURNISH & INSTALL	LF	\$ 724.39
9.5' X 4' CBC, FURNISH & INSTALL	LF	\$ 764.57
10' X 4' CBC, FURNISH & INSTALL	LF	\$ 847.88
10.5' X 4' CBC, FURNISH & INSTALL	LF	\$ 860.00
11' X 2.5' CBC, FURNISH & INSTALL	LF	\$ 764.57
11' X 4' CBC, FURNISH & INSTALL	LF	\$ 890.58
11.5' X 4' CBC, FURNISH & INSTALL	LF	\$ 934.41
12' X 4' CBC, FURNISH & INSTALL	LF	\$ 979.15
6.5' X 4.5' CBC, FURNISH & INSTALL	LF	\$ 572.80
7' X 4.5' CBC, FURNISH & INSTALL	LF	\$ 609.33
8' X 4.5' CBC, FURNISH & INSTALL	LF	\$ 685.13
9' X 4.5' CBC, FURNISH & INSTALL	LF	\$ 764.57
10' X 4.5' CBC, FURNISH & INSTALL	LF	\$ 847.66
10.5' X 4.5' CBC, FURNISH & INSTALL	LF	\$ 890.58
11' X 4.5' CBC, FURNISH & INSTALL	LF	\$ 934.41
12' X 4.5' CBC, FURNISH & INSTALL	LF	\$ 1,024.80
5' X 5' CBC, FURNISH & INSTALL	LF	\$ 502.48
5.5' X 5' CBC, FURNISH & INSTALL	LF	\$ 537.18
6' X 5' CBC, FURNISH & INSTALL	LF	\$ 572.80
6.5' X 5' CBC, FURNISH & INSTALL	LF	\$ 609.33
7' X 5' CBC, FURNISH & INSTALL	LF	\$ 646.77
7.5' X 5' CBC, FURNISH & INSTALL	LF	\$ 685.13
8' X 5' CBC, FURNISH & INSTALL	LF	\$ 724.39
8.5' X 5' CBC, FURNISH & INSTALL	LF	\$ 764.57
9' X 5' CBC, FURNISH & INSTALL	LF	\$ 805.66
9.5' X 5' CBC, FURNISH & INSTALL	LF	\$ 847.66
10' X 5' CBC, FURNISH & INSTALL	LF	\$ 890.58
10.5' X 5' CBC, FURNISH & INSTALL	LF	\$ 934.41

Item	Unit	Unit Cost
11' X 5' CBC, FURNISH & INSTALL	LF	\$ 979.15
11.5' X 5' CBC, FURNISH & INSTALL	LF	\$ 1,024.80
12' X 5' CBC, FURNISH & INSTALL	LF	\$ 1,071.37
FLOOD WARNING SYSTEM	LS	\$ 10,000.00
BLOCK EXISTING PIPE	LS	\$ 2,000.00
CHANNEL EXCAVATION, GRADING & SPOILS REMOVAL	CY	\$ 7.71
GRASS LINED CHANNEL REVEGETATION	SY	\$ 3.00
CONCRETE CHANNEL LINING	SY	\$ 49.50
POND EXCAVATION, GRADING & SPOILS REMOVAL	CY	\$ 4.00
CHANNEL EXCAVATION, GRADING & SPOILS REMOVAL	LF	\$ 7.09