

Willow Hill Raw Water Line Rehabilitation Project

Various pipeline segments installed from 1975 to 1997.  
Pipe size and type taken directly from as-built plans. No other information available from as-builts.

Size (in)	Pipe Type	Length (ft)
42	Reinforced Concrete Pipe	621
48	Reinforced Concrete Pipe Class I	1,562
48	Reinforced Concrete Pipe Class III	659
30	Reinforced Concrete Pipe Class I	1,672
30	Reinforced Concrete Pressure Pipe	16,856
30	Reinforced Concrete Pipe Class IV	175

Pipe begins at the City's Water Treatment Plant. This is where stationing for the entire pipeline begins.  
There is an existing 60" raw water main with an 18" tee and valve to serve the Willow Hill Raw Water Line.  
There is approximately 50 feet of 18" CCP with an 18" x 42" eccentric reducer that connects the 18" to the 42".  
ALL DEPTHS SHOWN BELOW ARE APPROXIMATED FROM AS-BUILT PLANS AND ARE TO TOP OF PIPE.

Project: Natoma Raw Water Pipeline Phase B

Camp Dresser & McKee, Inc. - 2000

Begin STA.	End STA.	Size (in)	Pipe Type	Length (ft)	Depth (ft)	Notes
0+00	0+47	18	CCP	47	6-9	18" pipe ties into 60" raw water inlet pipe to Water Treatment Plant
0+47	0+55	18x42	Eccentric Reducer	8	6-9	18" x 42" eccentric reducer connects 18" pipe to 42" pipe

Project: Water System Improvements Project No. 1

James. A Montgomery Consulting Engineers, Inc. - 1976

Begin STA.	End STA.	Size (in)	Pipe Type	Length (ft)	Depth (ft)	Notes
0+55	6+56	42	RCP	601	4-7.5	42" RCP to a 45 degree horizontal bend in Randall Drive u/s of diversion structure
6+56	6+65	42	RCP	9	4-7.5	45 degree horizontal bend at 6+56 to 45 degree horizontal bend at 6+65
6+65	6+76	42	RCP	9	7.5	42" RCP to a 45 degree horizontal bend at 6+65 to diversion structure in Randall Drive

Project: Rancho Diablo

G.W. Consulting Engineers - 1979

Begin STA.	End STA.	Size (in)	Pipe Type	Length (ft)	Depth (ft)	Notes
6+76	18+00	48	RCP Class I	1124	1.5-3.5	48" RCP Class I from diversion structure in Randall Drive to SDMH in next plan set

Project: Willow Creek Estates Unit No. 7

The Spink Corporation - 1984

Begin STA.	End STA.	Size (in)	Pipe Type	Length (ft)	Depth (ft)	Notes
18+00	20+04	48	RCP Class III	204	1.5-4	48" RCP Class III and saddle MH installed at 18+00 and in Catlin Court at 20+04
20+04	23+63	48	RCP Class III	359	1.5-4	48" RCP Class III and saddle MH installed in Rebecca Way at 23+63
23+63	24+59	48	RCP Class III	96	9.5-10.5	48" RCP Class III and saddle MH installed in Rebecca Way at 24+59
24+59	25+86	48	RCP Class I	127	2-10	48" RCP Class I and saddle MH in backyard of 136 Rebecca at 25+86
25+86	28+47	48	RCP Class I	261	2	48" RCP Class I and saddle MH in backyard of 619 Hancock Drive at 28+47
28+47	28+97	48	RCP Class I	50	2	48" RCP Class I and saddle MH in backyard of 619 Hancock Drive (ROW Line) at 28+47

**Project: Natomas Ditch Replacement**

The Spink Corporation - 1997

Begin STA.	End STA.	Size (in)	Pipe Type	Length (ft)	Depth (ft)	Notes
28+97	32+89	30	RCP Class I	392	4.5-11.5	30" RCP Class I connects to saddle MH installed at 28+97 and new regular MH in SMUD easement at 32+89
32+89	35+39	30	RCP Class I	250	2.5-11.5	30" RCP Class I and regular MH installed in SMUD easement at 35+39
35+39	38+89	30	RCP Class I	350	4-10	30" RCP Class I and regular MH installed in SMUD easement at 38+89
38+89	45+69	30	RCP Class I	680	12-14	30" RCP Class I and connection to 30" RCPP shown in plan set below in Oak Ave Pkwy at 45+69

Note: Plan sheet from STA. 38+89 to 45+69 could not be located and the length is approximated using ArcView. No other manholes are known in this length.

**Project: Willow Creek Estates East**

The Spink Corporation - 1985

Begin STA.	End STA.	Size (in)	Pipe Type	Length (ft)	Depth (ft)	Notes
45+69	45+79	30	RCPP	10	11-12	30" RCPP to 20 degree horizontal bend at 45+79
45+79	46+27	30	RCPP	48	11-12	30" RCPP from 20 degree horizontal bend at 45+79 to 45 degree horizontal bend at 46+27
46+27	62+93	30	RCPP	1666	5-12	30" RCPP from 45 degree horizontal bend at 46+27 to 45 degree horizontal bend at 62+93 (Oak Ave. & Willow Creek)
62+93	63+20	30	RCPP	27	5-11	30" RCPP from 45 degree horizontal bend at 62+93 to 45 degree horizontal bend at 63+20
63+20	64+58	30	RCPP	138	8-14	30" RCPP from 45 degree horizontal bend at 63+20 to pressure MH at 64+58 near Humbug Creek in Oak Ave Pkwy.
64+58	87+78	30	RCPP	2320	5-14	30" RCPP from pressure MH at 64+58 to 45 degree vertical bend at 87+78
87+78	87+83	30	RCPP	5	13-14	30" RCPP from 45 degree vertical bend at 87+78 to 45 degree vertical bend at 87+83
87+83	88+33	30	RCPP	50	13-14	30" RCPP from 45 degree vertical bend at 87+83 to 45 degree vertical bend at 88+33
88+33	88+35	30	RCPP	2	13-14	30" RCPP from 45 degree vertical bend at 88+33 to pressure manhole at 88+35
88+35	88+38	30	RCPP	3	13-14	30" RCPP from pressure MH at 88+35 to 45 degree vertical bend at 88+38
88+38	107+76	30	RCPP	1938	6-11	30" RCPP from 45 degree vertical bend at 88+38 to 45 degree horizontal bend at 107+76
107+76	108+33	30	RCPP	57	7-9	30" RCPP from 45 degree horizontal bend at 107+76 to 45 degree horizontal bend at 108+33

Note: From STA. 87+78 to 88+38 on Oak Avenue Parkway, these notes and dimensions are from the *Willow Creek Estates South - Oak Avenue Parkway* as-builts. This

portion of the raw water line was lowered and the Pressure MH relocated in 1987 to install a concrete box culvert.

Note: In 1989, approximately 115 lineal feet of 30" RCPP was removed to begin the next phase of construction as part of the *Natomas Ditch Raw Water Pipeline* project.

The new stationing is shown in the table of information below.

**Project: Natomas Ditch Raw Water Pipeline**

PSOMAS - 1989

Begin STA.	End STA.	Size (in)	Pipe Type	Length (ft)	Depth (ft)	Notes
107+18	107+78	30	RCPP	60	3.5-4.5	30" RCPP to 2" air relief valve
107+78	114+08	30	RCPP	630	4.5-8	30" RCPP from 2" ARV at 107+78 to horizontal bend at 114+08
114+08	117+52	30	RCPP	344	2.5-5	30" RCPP from horizontal bend at 114+08 to horizontal bend at 117+52
117+52	120+68	30	RCPP	316	2.5-4	30" RCPP from horizontal bend at 117+52 to horizontal bend at 120+68
120+68	121+19	30	RCPP	51	3-6.5	30" RCPP from horizontal bend at 120+68 to 121+19 inside new 48" RCP Class IV casing under SPRR
121+19	121+28	30	RCPP	9	8-8.5	30" RCPP from the end of new 48" casing at 121+19 to the beginning of existing 48" casing at 121+28
121+28	121+71	30	RCPP	43	8-8.5	30" RCPP from the beginning of existing 48" casing at 121+28 to the end of existing 48" casing and 2" ARV at 121+71
121+71	122+28	30	RCPP	57	8-8.5	30" RCPP from the end of existing 48" casing and 2" ARV at 121+71 to the 90 degree horizontal bend at 122+28
122+28	132+51	30	RCPP	1023	6-18	30" RCPP from 90 degree horizontal bend at 122+28 to 4" blow off valve at 132+51
132+51	133+81	30	RCPP	130	6-7.5	30" RCPP from 4" BOV at 132+51 to 90 degree horizontal bend at 133+81 (Oak Ave. & East Bidwell)
133+81	149+91	30	RCPP	1610	5-6	30" RCPP from 90 degree horizontal bend at 133+81 to 2" ARV at 149+91
149+91	151+47	30	RCPP	156	4-5	30" RCPP from 2" ARV at 149+91 to 90 degree horizontal bend at 151+47 (Oak. Ave. & Riley)
151+47	170+08	30	RCPP	1861	4-8.5	30" RCPP from 90 degree horizontal bend at 151+47 to 2" ARV at 170+08
170+08	173+12	30	RCPP	304	3-4	30" RCPP from 2" ARV at 170+08 to 90 degree horizontal bend at 173+12
173+12	174+00	30	RCPP	88	4.5-6	30" RCPP from 90 degree horizontal bend at 173+12 to horizontal bend at 174+00
174+00	175+33	30	RCPP	133	4.5-6	30" RCPP from horizontal bend at 174+00 to horizontal angle point at 175+33
175+33	175+73	30	RCPP	40	4.5-6	30" RCPP from horizontal bend at 175+33 to horizontal angle point at 175+73

175+73	176+02	30	RCPP	29	4-5	30" RCPP from horizontal bend at 175+73 to 4" BOV at 176+02
176+02	176+71	30	RCPP	69	4-12	30" RCPP from 4" BOV at 176+02 to horizontal bend at 176+71
176+71	179+31	30	RCPP	260	4-12	30" RCPP horizontal bend at 176+71 to horizontal bend at 179+31
179+31	179+43	30	RCPP	12	7-12	30" RCPP horizontal bend at 179+31 to horizontal bend at 179+43

Note: In 1998, approximately 35 lineal feet of 30" RCPP was removed to begin the next phase of construction as part of the *30" Natomas Ditch Raw Water Pipeline* project. The new stationing is shown in the table of information below.

**Project: Willow Springs 30" Natomas Ditch Raw Water Pipeline**

The Spink Corporation - 1998

Begin STA.	End STA.	Size (in)	Pipe Type	Length (ft)	Depth (ft)	Notes
178+98	179+02	30	RCPP	4	5	Connection from existing 30" RCPP to new 30" RCPP with 90 degree horizontal bend
179+02	179+23	30	RCPP	21	5-6	30" RCPP from 90 degree horizontal bend at 179+23 to 4" blind flange outlet at 179+23
179+23	179+40	30	RCPP	17	6.5-8.5	30" RCPP from 4" blind flange outlet at 179+23 to horizontal bend at 179+40
179+40	179+94	30	RCPP	54	8.5-12	30" RCPP from horizontal bend at 179+40 to 22-1/2 degree vertical bend at 179+94
179+94	180+28	30	RCPP	34	4-12	30" RCPP from 22-1/2 degree vertical bend at 179+94 to 22-1/2 degree vertical bend at 180+28
180+28	181+31	30	RCPP	103	3.5-4	30" RCPP from 22-1/2 degree vertical bend at 180+28 to horizontal angle point at 181+31
181+31	182+14	30	RCPP	83	3.5-4	30" RCPP from horizontal angle point at 181+31 to horizontal angle point at 182+14
182+14	182+35	30	RCPP	21	3.5-4	30" RCPP from horizontal angle point at 182+14 to 4" blind flange outlet at 182+35
182+35	183+67	30	RCPP	132	3.5-4	30" RCPP from 4" blind flange outlet at 182+35 to horizontal angle point at 183+67
183+67	184+10	30	RCPP	43	3.5-4	30" RCPP from horizontal angle point at 183+67 to vertical angle point at 184+10
184+10	184+30	30	RCPP	20	2.5-4	30" RCPP from vertical angle point at 184+10 to vertical angle point at 184+30
184+30	184+73	30	RCPP	43	2.5-3	30" RCPP from vertical angle point at 184+30 to 2" ARV at 184+73
184+73	186+43	30	RCPP	170	2.5-6	30" RCPP from 2" ARV at 184+73 to horizontal angle point at 186+43
186+43	187+58	30	RCPP	115	5.5-6.5	30" RCPP from horizontal angle point at 186+43 to 4" BOV at 187+58
187+58	189+58	30	RCPP	200	5.5-6.5	30" RCPP from 4" BOV at 187+58 to horizontal angle point at 189+58
189+58	194+34	30	RCPP	476	4-6.5	30" RCPP from horizontal angle point at 189+58 to horizontal angle point at 194+34
194+34	196+73	30	RCPP	239	4-6.5	30" RCPP from horizontal angle point at 194+34 to 4" BOV at 196+73
196+73	199+03	30	RCPP	230	3.5-6.5	30" RCPP from 4" BOV at 196+73 to 2" air release/air vacuum valve at 199+03
199+03	199+54	30	RCPP	51	3.5-6.5	30" RCPP from 2" air release/air vacuum valve at 199+03 to 60" SDMH at 199+54
199+54	203+48	30	RCPP	394	3.5-4.5	30" RCPP from 60" SDMH at 199+54 to 60" SDMH at 203+48
203+48	206+64	30	RCPP	316	4-6	30" RCPP from 60" SDMH at 203+48 to 60" SDMH at 206+64
206+64	208+66	30	RCPP	202	4-6	30" RCPP from 60" SDMH at 206+64 to 60" SDMH at 208+66
208+66	211+99	30	RCPP	333	4.-6	30" RCPP from 60" SDMH at 208+66 to 60" SDMH at 211+99
211+99	213+63	30	RCPP	164	5-10	30" RCPP from 60" SDMH at 211+99 to 60" SDMH at 213+63
213+63	213+85	30	RCPP	22	10-12	30" RCPP from 60" SDMH at 213+63 to 60" SDMH at 213+85
213+85	215+80	30	RCPP	195	5-9.5	30" RCPP from 60" SDMH at 213+85 to 60" SDMH at 215+80
215+80	216+00	30	RCPP	20	3-8	30" RCPP from 60" SDMH at 215+80 to concrete outlet into Willow Hill Reservoir

Note: Per project plans, the pipe is reinfocred concrete low head pressure pipe per ASTM C361.