



City of Lawrence

UTILITIES

Memorandum

TO: Bob Brower, Utilities Field Operations Manager
FROM: Dave Osborne, Project Inspector
CC: Mark Hegeman, Water/Wastewater System Manager
Mike Lawless, Assistant Director of Utilities
DATE: January 10, 2011
RE: Water Line Upgrade of Miller/Wells Acres

Department of Utilities Staff has evaluated the former Rural Water District area north of Riverridge Road commonly known as Miller/Wells Acres to increase water capacity and fire protection needs throughout the area. Little is known about the current water supply installed by the rural water district. There are no fire hydrants in the area and 2" and 3" plastic water lines were found at all the roads going into Miller/Wells Acres at Riverridge Rd. during the installation of the 16" ductile water line installed in 2001 along Riverridge Rd. The Miller/Wells Acres project has been designed in two phases. Two phases are required to first create a "loop" in the water system in order to connect the remaining waterlines during phase II.

Phase I: Utilities staff would start the new 8" PVC water line by connecting to an existing 8" PVC water line that was installed in 1998 during the construction of the Northfield Addition and proceed West on the north side of N. 1770 Rd. to E. 1310 Rd., then going south on E. 1310 Rd. to connect to the existing 16" ductile iron water line that was installed along the North side of Riverridge Rd. While installing the waterline on N. 1770 Rd., tees and valves would be installed at E. 1318 Rd., E. 1326 Rd., and E. 1338 Rd. for the Phase II water line. Phase I would provide water supply to 22 customers and include 2 fire hydrants along E. 1310 Rd. Fire hydrants cannot be installed along the north side of N. 1770 Rd. due to a large ditch along the north side of the road. The approximate cost of Phase I is \$52,000.

Phase II: Utilities staff would connect to the existing 8" valves that were installed during Phase I at the north ends of E. 1318, E. 1326, and E. 1338 Roads which all intersect with N. 1770 Rd. Fire hydrants would be installed at those intersections and also in the middle of the blocks during the installation of the 8" PVC water lines running south and connecting to the existing 16" ductile iron water line along Riverridge Rd. In addition, approximately 560 lineal feet of 6" PVC would be installed along E. 1338 Rd. north of N. 1770 Rd. to serve 6 customers and sanitary pump station #46. Phase II would provide water supply to a total of 23 customers and include 6 fire hydrants. The approximate cost of Phase II is \$75,000.

Miller Acres North of Riverridge Rd. Phase I									
Estimated Cost									
Item	Qty	Unit	Description	City Part #	Estimated Unit Cost	Total Estimated Cost			
1.	2400	L.F.	8" Bell Type Ductile Iron Pipe, Class 50 Slip Joint	WD0850588	\$ 9.25	\$ 22,200.00			
2.	1	Ea.	16" x 8" SS Tapping Sleeve, W/Test Plug, 17.40 O.D.	WD1200161	\$ 995.00	\$ 995.00			
3.	1	Ea.	8" Tapping Valve, OL, RS, NRS, Epoxy Coated, W/Acc	WD2950202	\$ 725.00	\$ 725.00			
4.	6	Ea.	8" MJ Gate Valve, NRS, OL, RS, DI, Epoxy Coated, W/Acc	WD2250193	\$ 533.98	\$ 3,203.88			
5.	3	Ea.	6" MJ Gate Valve, NRS, OL, RS, DI, Epoxy Coated, W/Acc	WD2250192	\$ 355.00	\$ 1,065.00			
6.	1	Ea.	8" x 12" Long MJ Sleeve, DI C.I. O.D. W/Acc.	WD2050695	\$ 86.27	\$ 86.27			
7.	1	Ea.	8" Bend, MJ, 90 Deg., DI, W/Acc	WD2050643	\$ 98.90	\$ 98.90			
8.	1	Ea.	8" x 8" Cross, MJ, D.I., W/Acc	WD2050728	\$ 136.40	\$ 136.40			
9.	2	Ea.	8" x 8" Tee, MJ, D.I., W/Acc	WD2050680	\$ 197.54	\$ 395.08			
10.	2	Ea.	8" x 6" Swivel Tee, DI, W/Acc.	WD2050742	\$ 156.48	\$ 312.96			
11.	1	Ea.	8" x 6" Sleeve, Reducing, MJ, D.I., W/Acc	WD2050665	\$ 60.35	\$ 60.35			
12.	4	Ea.	8" x 12" Anchor Coupling W/Swivel x Swivel, MJ, D.I., W/Acc.	WD2050733	\$ 104.88	\$ 419.52			
13.	1	Ea.	6" x 12" Anchor Coupling W/Swivel x Swivel, MJ, D.I., W/Acc.	WD2050731	\$ 70.50	\$ 70.50			
14.	2	Ea.	6" x 18" Anchor Coupling W/Swivel x Swivel, MJ, D.I., W/Acc.	WD2050732	\$ 88.45	\$ 176.90			
15.	2	Ea.	4.5' Bury Fire Hydrant	WD3150551	\$ 1,340.00	\$ 2,680.00			
16.	9	Ea.	Valve Box Ring/Cover Clay & Bailey #2194	WD0550543	\$ 8.98	\$ 80.82			
17.	22	Ea.	18" x 30" ADS Meter Tile	WD2200547	\$ 21.62	\$ 475.64			
18.	22	Ea.	C-32 Ring/Cover S/Nut, Ford	WD0550531	\$ 54.57	\$ 1,200.54			
19.	22	Ea.	VB81W 5/8 Copper Setter Ford STGT, PJ, CTS 10/Box	WD0600520	\$ 44.85	\$ 986.70			
20.	22	Ea.	8" x 3/4" CC Brass Saddle, C900 Ford Series S90-803	WD0300131	\$ 40.69	\$ 895.18			
21.	22	Ea.	3/4" CC Ball Corp Stop, PJ, Brass, Cts, Ford FB1000-3	WD0250019	\$ 25.71	\$ 565.62			
22.	22	Ea.	3/4" STGT Coupling, Brass, PJ, CTS	WD0250018	\$ 9.33	\$ 205.26			
23.	22	Ea.	3/4" C.I.P. (M) Brass Stgt. Coupling, CTS, PJ	WD0250002	\$ 8.46	\$ 186.12			
24.	22	Ea.	3/4" Galvanized Pipe Cap	WD1350972	\$ 0.71	\$ 15.62			
25.	700	L.F.	3/4" CTS PE Tubing, 100 FT. Rolls	WD0000027	\$ 0.15	\$ 105.00			
26.	22	Ea.	3/4" S.S. Stiffner Insert	WD0000013	\$ 1.08	\$ 23.76			
27.	20%	L.S.	Sand Embedment	N/A	\$ 7,473.20	\$ 7,473.20			
28.	10%	L.S.	Miscellaneous Concrete	N/A	\$ 3,736.60	\$ 3,736.60			
29.	10%	L.S.	Miscellaneous Flowable Fill	N/A	\$ 3,736.60	\$ 3,736.60			
Total Estimated Cost=						\$ 52,312.42			

Miller Acres North of Riverridge Rd. Phase II						
Estimated Cost						
Item	Qty	Unit	Description	City Part #	Estimated Unit Cost	Total Estimated Cost
1.	2360	L.F.	8" PVC Pipe, C900, SDR 14 Slip Joint 20' Length	WD2350603	\$ 6.60	\$ 15,576.00
2.	940	L.F.	8" Bell Type Ductile Iron Pipe, Class 50 Slip Joint	WD0850588	\$ 9.25	\$ 8,695.00
3.	560	L.F.	6" Bell Type Ductile Iron Pipe, Class 50 Slip Joint	WD0850587	\$ 6.77	\$ 3,791.20
4.	3	Ea.	16" x 8" SS Tapping Sleeve, W/Test Plug, 17.40 O.D.	WD1200161	\$ 995.00	\$ 2,985.00
5.	3	Ea.	8" Tapping Valve, OL, RS, NRS, Epoxy Coated, W/Acc	WD2950202	\$ 725.00	\$ 2,175.00
6.	6	Ea.	8" MJ Gate Valve, NRS, OL, RS, DI, Epoxy Coated, W/Acc	WD2250193	\$ 533.98	\$ 3,203.88
7.	6	Ea.	6" MJ Gate Valve, NRS, OL, RS, DI, Epoxy Coated, W/Acc	WD2250192	\$ 355.00	\$ 2,130.00
8.	3	Ea.	8" x 12" Long MJ Sleeve, DI C.I. O.D. W/Acc.	WD2050695	\$ 86.27	\$ 258.81
9.	6	Ea.	8" x 6" Swivel Tee, DI, W/Acc.	WD2050742	\$ 156.48	\$ 938.88
10.	6	Ea.	6" x 18" Anchor Coupling W/Swivel x Swivel, MJ, D.I., W/Acc.	WD2050732	\$ 88.45	\$ 530.70
11.	6	Ea.	4.5' Bury Fire Hydrant	WD3150551	\$ 1,340.00	\$ 8,040.00
12.	12	Ea.	Valve Box Ring/Cover Clay & Bailey #2194	WD0550543	\$ 8.98	\$ 107.76
13.	23	Ea.	18" x 30" ADS Meter Tile	WD2200547	\$ 21.62	\$ 497.26
14.	23	Ea.	C-32 Ring/Cover S/Nut, Ford	WD0550531	\$ 54.57	\$ 1,255.11
15.	23	Ea.	VB81W 5/8 Copper Setter Ford STGT, PJ, CTS 10/Box	WD0600520	\$ 44.85	\$ 1,031.55
16.	23	Ea.	8" x 3/4" CC Brass Saddle, C900 Ford Series S90-803	WD0300131	\$ 40.69	\$ 935.87
17.	23	Ea.	3/4" CC Ball Corp Stop, PJ, Brass, Cts, Ford FB1000-3	WD0250019	\$ 25.71	\$ 591.33
18.	23	Ea.	3/4" STGT Coupling, Brass, PJ, CTS	WD0250018	\$ 9.33	\$ 214.59
19.	23	Ea.	3/4" C.I.P. (M) Brass Stgt. Coupling, CTS, PJ	WD0250002	\$ 8.46	\$ 194.58
20.	23	Ea.	3/4" Galvanized Pipe Cap	WD1350972	\$ 0.71	\$ 16.33
21.	900	L.F.	3/4" CTS PE Tubing, 100 FT. Rolls	WD0000027	\$ 0.15	\$ 135.00
22.	23	Ea.	3/4" S.S. Stiffner Insert	WD0000013	\$ 1.08	\$ 24.84
23.	20%	L.S.	Sand Embedment	N/A	\$10,665.74	\$ 10,665.74
24.	10%	L.S.	Miscellaneous Concrete	N/A	\$ 5,332.87	\$ 5,332.87
25.	10%	L.S.	Miscellaneous Flowable Fill	N/A	\$ 5,332.87	\$ 5,332.87
Total Estimated Cost=						\$ 74,660.17

Miller Acres North of Riverridge Rd. Phase I & II Combined									
Estimated Cost									
Item	Qty	Unit	Description	City Part #	Estimated Unit Cost	Total Estimated Cost			
1.	2360	L.F.	8" PVC Pipe, C900, SDR 14 Slip Joint 20' Length	WD2350603	\$ 6.60	\$ 15,576.00			
2.	3340	L.F.	8" Bell Type Ductile Iron Pipe, Class 50 Slip Joint	WD0850588	\$ 9.25	\$ 30,895.00			
3.	560	L.F.	6" Bell Type Ductile Iron Pipe, Class 50 Slip Joint	WD0850587	\$ 6.77	\$ 3,791.20			
4.	4	Ea.	16" x 8" SS Tapping Sleeve, W/Test Plug, 17.40 O.D.	WD1200161	\$ 995.00	\$ 3,980.00			
5.	4	Ea.	8" Tapping Valve, OL, RS, NRS, Epoxy Coated, W/Acc	WD2950202	\$ 725.00	\$ 2,900.00			
6.	12	Ea.	8" MJ Gate Valve, NRS, OL, RS, DI, Epoxy Coated, W/Acc	WD2250193	\$ 533.98	\$ 6,407.76			
7.	9	Ea.	6" MJ Gate Valve, NRS, OL, RS, DI, Epoxy Coated, W/Acc	WD2250192	\$ 355.00	\$ 3,195.00			
8.	4	Ea.	8" x 12" Long MJ Sleeve, DI C.I. O.D. W/Acc.	WD2050695	\$ 86.27	\$ 345.08			
9.	1	Ea.	8" Bend, MJ, 90 Deg., DI, W/Acc	WD2050643	\$ 98.90	\$ 98.90			
10.	1	Ea.	8" x 8" Cross, MJ, D.I., W/Acc	WD2050728	\$ 136.40	\$ 136.40			
11.	2	Ea.	8" x 8" Tee, MJ, D.I., W/Acc	WD2050680	\$ 197.54	\$ 395.08			
12.	8	Ea.	8" x 6" Swivel Tee, DI, W/Acc.	WD2050742	\$ 156.48	\$ 1,251.84			
13.	1	Ea.	8" x 6" Sleeve, Reducing, MJ, D.I., W/Acc	WD2050665	\$ 60.35	\$ 60.35			
14.	4	Ea.	8" x 12" Anchor Coupling W/Swivel x Swivel, MJ, D.I., W/Acc.	WD2050733	\$ 104.88	\$ 419.52			
15.	1	Ea.	6" x 12" Anchor Coupling W/Swivel x Swivel, MJ, D.I., W/Acc.	WD2050731	\$ 70.50	\$ 70.50			
16.	8	Ea.	6" x 18" Anchor Coupling W/Swivel x Swivel, MJ, D.I., W/Acc.	WD2050732	\$ 88.45	\$ 707.60			
17.	8	Ea.	4.5' Bury Fire Hydrant	WD3150551	\$ 1,340.00	\$ 10,720.00			
18.	21	Ea.	Valve Box Ring/Cover Clay & Bailey #2194	WD0550543	\$ 8.98	\$ 188.58			
19.	45	Ea.	18" x 30" ADS Meter Tile	WD2200547	\$ 21.62	\$ 972.90			
20.	45	Ea.	C-32 Ring/Cover S/Nut, Ford	WD0550531	\$ 54.57	\$ 2,455.65			
21.	45	Ea.	VB81W 5/8 Copper Setter Ford STGT, PJ, CTS 10/Box	WD0600520	\$ 44.85	\$ 2,018.25			
22.	45	Ea.	8" x 3/4" CC Brass Saddle, C900 Ford Series S90-803	WD0300131	\$ 40.69	\$ 1,831.05			
23.	45	Ea.	3/4" CC Ball Corp Stop, PJ, Brass, Cts, Ford FB1000-3	WD0250019	\$ 25.71	\$ 1,156.95			
24.	45	Ea.	3/4" STGT Coupling, Brass, PJ, CTS	WD0250018	\$ 9.33	\$ 419.85			
25.	45	Ea.	3/4" C.I.P. (M) Brass Stgt. Coupling, CTS, PJ	WD0250002	\$ 8.46	\$ 380.70			
26.	45	Ea.	3/4" Galvanized Pipe Cap	WD1350972	\$ 0.71	\$ 31.95			
27.	1600	L.F.	3/4" CTS PE Tubing, 100 FT. Rolls	WD0000027	\$ 0.15	\$ 240.00			
28.	45	Ea.	3/4" S.S. Stiffner Insert	WD0000013	\$ 1.08	\$ 48.60			
29.	20%	L.S.	Sand Embedment	N/A	\$ 18,138.94	\$ 18,138.94			
30.	10%	L.S.	Miscellaneous Concrete	N/A	\$ 9,069.47	\$ 9,069.47			
31.	10%	L.S.	Miscellaneous Flowable Fill	N/A	\$ 9,069.47	\$ 9,069.47			
						Total Estimated Cost=	\$ 126,972.59		

